

| 2003 IMC – 2003 UMC REFERENCE COMPARISON  |  |  |
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| IBC Code Section  | IMC Code Sections  | UMC Code Sections  |
| <b>ITEM 1</b><br><b>201.3 Terms defined in other codes.</b> Where terms are not defined in this code and are defined in the <i>International Fuel Gas Code</i> , <i>International Fire Code</i> , <i>International Mechanical Code</i> or <i>International Plumbing Code</i> , such terms shall have the meanings ascribed to them as in those codes.   | Indeterminate  | Indeterminate  |
| <b>ITEM 1</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |  |
| <b>ITEM 2</b><br><b>[F] 307.9 Exceptions:</b> The following shall not be classified in Group H, but shall be classified in the occupancy which they most nearly resemble. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the <i>International Fire Code</i> .<br>11. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the <i>International Mechanical Code</i> . | <b>[F] 502.4 Stationary lead-acid battery systems.</b> Ventilation shall be provided for stationary lead-acid battery systems in accordance with this chapter and Section 502.4.1 or 502.4.2.<br><b>[F] 502.4.1 Hydrogen limit.</b> The ventilation system shall be designed to limit the maximum concentration of hydrogen to 1.0 percent of the total volume of the room.<br><b>[F] 502.4.2 Ventilation rate.</b> Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot (cfm/ft <sup>2</sup> ) [0.00508 m <sup>3</sup> /(s • m <sup>2</sup> )] of floor area of the room.<br><b>[F] 502.5 Valve-regulated lead-acid batteries.</b> Valve-regulated lead-acid battery systems as regulated by Section 609 of the <i>International Fire Code</i> , shall be provided with ventilation in accordance with Section 502.5.1 or 502.5.2 for rooms and in accordance with Section 502.5.3 or 502.5.4 for cabinets.<br><b>[F] 502.5.1 Hydrogen limit in rooms.</b> The ventilation system shall be designed to limit the maximum concentration of hydrogen to 1.0 percent of the total volume of the room during the worst-case event of simultaneous boost charging of all batteries in the | <b>505.1 General.</b> A mechanical ventilation or exhaust system shall be installed to control, capture, and remove emissions generated from product use or handling when required by the Building Code or Fire Code and when such emissions result in a hazard to life or property. The design of the system shall be such that the emissions are confined to the area in which they are generated by air currents, hoods, or enclosures and shall be exhausted by a duct system to a safe location or treated by removing contaminants. Ducts conveying explosives or flammable vapors, fumes, or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums.<br>...<br>Separate and distinct systems shall be provided for incompatible materials.<br>Contaminated air shall not be recirculated to occupied areas unless contaminants have been removed. Air contaminated with explosive or flammable vapors, fumes, or dusts; flammable or toxic gases; or radioactive material shall not be recirculated. |



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| <b>ITEM 3</b><br><b>406.4 Enclosed parking garages.</b><br><b>406.4.2 Ventilation.</b> A mechanical ventilation system shall be provided in accordance with the <b>International Mechanical Code</b> . | <b>SECTION 404</b><br><b>ENCLOSED PARKING GARAGES</b><br><b>404.1 Enclosed parking garages.</b> Mechanical ventilation systems for enclosed parking garages are not required to operate continuously where the system is arranged to operate automatically upon detection of a concentration of carbon monoxide of 25 parts per million (ppm) by approved automatic detection devices.<br><b>404.2 Minimum ventilation.</b> Automatic operation of the system shall not reduce the ventilation rate below 0.05 cfm per square foot (0.00025m <sup>3</sup> /s • m <sup>2</sup> ) of the floor area and the system shall be capable of producing a ventilation rate of 1.5 cfm per square foot (0.0076m <sup>3</sup> /s • m <sup>2</sup> ) of floor area.<br><b>404.3 Occupied spaces accessory to public garages.</b> Connecting offices, waiting rooms, ticket booths and similar uses that are accessory to a public garage shall be maintained at a positive pressure and shall be provided with ventilation in accordance with Section 403.3.<br>From Footnote d., Table 403.3 "A mechanical ventilation system shall not be required in garages having a floor area not exceeding 850 square feet and used for the storage of not more than four vehicles or trucks of 1 ton maximum capacity."<br><b>502.13 Public garages.</b> Mechanical exhaust systems for public garages, as required in Chapter 4, shall operate continuously or in accordance with Section 404. | No requirements in the 2003 UMC.<br><br><b>2001 CBC §1202.2.7 Group S parking garages.</b> In Group S, Division 3 parking garages, other than open parking garages, used for storing or handling automobiles operating under their own power and on loading platforms in bus terminals, ventilation shall be provided capable of exhausting a minimum of 1.5 cubic feet per minute (cfm) per square foot (0.761 L/s/m <sup>2</sup> ) of gross floor area. The building official may approve an alternate ventilation system designed to exhaust a minimum of 14,000 cfm (6608 L/s) for each operating vehicle. Such system shall be based on the anticipated instantaneous movement rate of vehicles, but not less than 2.5 percent (or one vehicle) of the garage capacity. Automatic carbon monoxide sensing devices may be employed to modulate the ventilation system to maintain a maximum average concentration of carbon monoxide of 50 parts per million during any eight-hour period, with a maximum concentration not greater than 200 parts per million for a period not exceeding one hour. Connecting offices, waiting rooms, ticket booths and similar uses shall be supplied with conditioned air under positive pressure.<br><b>EXCEPTION:</b> Mechanical ventilation need not be provided within a Group S, Division 3 parking garage when openings complying with Section 311.9.2.2 are provided. |
| <b>ITEM 3</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.  |   |

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| <p><b>ITEM 4</b></p> <p><b>406.6 Repair garages.</b></p> <p><b>406.6.3 Ventilation.</b> Repair garages shall be mechanically ventilated in accordance with the <i>International Mechanical Code</i>. The ventilation system shall be controlled at the entrance to the garage.</p> | <p>From Table 403.3, Repair garages shall be ventilated with outdoor air at a rate of 1.5 cfm/ft<sup>2</sup> of floor area being ventilated.</p> <p><b>[F] 502.15 Repair garages.</b> Where Class I liquids or LP-gas are stored or used within a building having a basement or pit wherein flammable vapors could accumulate, the basement or pit shall be provided with ventilation designed to prevent the accumulation of flammable vapors therein.</p> <p><b>[F] 502.16 Repair garages for natural gas- and hydrogen-fueled vehicles.</b> Repair garages used for the repair of natural gas- or hydrogen-fueled vehicles shall be provided with an approved mechanical ventilation system. The mechanical ventilation system shall be in accordance with Sections 502.16.1 and 502.16.2.</p> <p><b>Exception:</b> Where approved by the code official, natural ventilation shall be permitted in lieu of mechanical ventilation.</p> <p><b>[F] 502.16.1 Design.</b> Indoor locations shall be ventilated utilizing air supply inlets and exhaust outlets arranged to provide uniform air movement to the extent practical. Inlets shall be uniformly arranged on exterior walls near floor level. Outlets shall be located at the high point of the room in exterior walls or the roof.</p> <p>1. Ventilation shall be by a continuous mechanical ventilation system or by a mechanical ventilation system activated by a continuously monitoring natural gas detection system activating at a gas concentration of 25 percent of the LFL. In all cases, the system shall shut down the fueling system in the event of failure of the ventilation system.</p> <p>2. The ventilation rate shall be at least 1 cubic foot per minute per 12 cubic feet [0.00138m<sup>3</sup>/(s •m<sup>3</sup>)] of room volume.</p> <p><b>[F] 502.16.2 Operation.</b> The mechanical ventilation system shall operate continuously.</p> <p><b>Exceptions:</b></p> <p>1. Mechanical ventilation systems that are interlocked with a gas detection system designed in accordance with the <i>International Fire Code</i>.</p> <p>2. Mechanical ventilation systems in garages that are used only for the repair of vehicles fueled by liquid fuels or odorized gases, such as CNG, where the ventilation system is electrically interlocked with the lighting circuit.</p> <p><b>502.17 Tire rebuilding or recapping.</b> Each room where rubber cement is used or mixed, or where flammable or combustible solvents are applied, shall be ventilated in accordance with the applicable provisions of NFPA 91.</p> | <p>No specific requirements in the 2003 UMC. §505.1 refers to the Building &amp; Fire Codes.</p> <p><b>2001 CBC §1202.2.1 General.</b> All enclosed portions of Group A, B, E, F, H, I, M and S Occupancies customarily occupied by human beings shall be provided with natural ventilation by means of openable exterior openings with an area not less than 1/20 of the total floor area or shall be provided with a mechanically operated ventilation system. Such exterior openings shall open directly onto a public way or a yard or court as set forth in Section 1203.4. Such mechanically operated ventilation system shall be capable of supplying a minimum of 15 cubic feet per minute (7 L/s) of outside air per occupant in all portions of the building during such time as the building is occupied. If the velocity of the air at a register exceeds 10 feet per second (3 m/s), the register shall be placed more than 8 feet (2438) above the floor directly beneath.</p> <p>...</p> <p><b>2001 CBC §1202.2.4 Group H, Division 4 Occupancies.</b> In all buildings classified as Group H, Division 4 Occupancies used for the repair or handling of motor vehicles operating under their own power, mechanical ventilation shall be provided capable of exhausting a minimum of 1 cubic foot per minute per square foot (0.044 L/s/m<sup>2</sup>) of floor area. Each engine repair stall shall be equipped with an exhaust pipe extension duct, extending to the outside of the building, which, if over 100 feet (3048 m) in length, shall mechanically exhaust 300 cubic feet per minute (141.6 L/s). Connecting offices and waiting rooms shall be supplied with conditioned air under positive pressure.</p> <p><b>EXCEPTION:</b> When approved, ventilating equipment may omitted in repair garages, enclosed heliports and aircraft hangars when well-distributed unobstructed openings to the outer air of sufficient size to supply necessary ventilation are furnished.</p> <p>...</p> <p><b>2001 CBC §1202.2.6 Group S repair and storage garages and aircraft hangars.</b> In Group S, Division 3 repair garages and storage garages and in Division 5 aircraft hangars, the mechanical ventilation system required by Section 1202.2.1 may be omitted when, in the opinion of the building official, the building is supplied with unobstructed openings to the outer air that are sufficient to provide the necessary ventilation.</p> |

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|  | <b>502.17.1 Buffing machines.</b> Each buffing machine shall be connected to a dust-collecting system that prevents the accumulation of the dust produced by the buffing process. |                   |
| <b>ITEM 4</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <input type="checkbox"/> The requirements are equivalent  |                   |
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| <b>ITEM 6</b><br><b>409.3 Projection room and equipment ventilation.</b> Ventilation shall be provided in accordance with the <i>International Mechanical Code</i> . | <b>502.11 Motion picture projectors.</b> Motion picture projectors shall be exhausted in accordance with Section 502.11.1 or 502.11.2.<br><b>502.11.1 Projectors with an exhaust discharge.</b> Projectors equipped with an exhaust discharge shall be directly connected to a mechanical exhaust system. The exhaust system shall operate at an exhaust rate as indicated by the manufacturer's installation instructions.<br><b>502.11.2 Projectors without exhaust connection.</b> Projectors without an exhaust connection shall have contaminants exhausted through a mechanical exhaust system. The exhaust rate for electric arc projectors shall be a minimum of 200 cubic feet per minute (cfm) (0.09 m <sup>3</sup> /s) per lamp. The exhaust rate for xenon projectors shall be a minimum of 300 cfm (0.14 m <sup>3</sup> /s) per lamp. Xenon projector exhaust shall be at a rate such that the exterior temperature of the lamp housing does not exceed 130°F (54°C). The lamp and projection room exhaust systems, whether combined or independent, shall not be interconnected with any other exhaust or return system within the building. | No specific requirements in the 2003 UMC.<br><br><b>2001 CBC §406.5.3.1 General.</b> Each projection machine shall be provided with an exhaust duct that will draw air from each lamp and exhaust it directly to the outside of the building in such a fashion that it will not be picked up by supply inlets. Such a duct shall be made of rigid materials, except for a continuous flexible connector approved for the purpose. The lamp exhaust system shall not be interconnected with any other system.<br><b>2001 CBC §406.5.3.2 Electric arc projection equipment.</b> The exhaust capacity shall be 200 cubic feet per minute (94.4 L/s) for each lamp connected to the lamp exhaust system, or as recommended by the equipment manufacturer. Auxiliary air may be introduced into the system through a screened opening to stabilize the arc.<br><b>2001 CBC §406.5.3.3 Xenon projection equipment.</b> The lamp exhaust system shall exhaust not less than 300 cubic feet per minute (142 L/s) per lamp or not less than that exhaust volume require or recommended by the equipment manufacturer, whichever is greater. The external temperature of the lamp housing shall not exceed 130°F (54.4°C) when operating. |
| <b>ITEM 6</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |   |

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| <b>ITEM 7</b><br><b>412.4 Aircraft paint hangars.</b><br><b>412.4.6 Ventilation.</b> Aircraft paint hangars shall be provided with ventilation as required in the <i>International Mechanical Code</i> . | <b>IMC §[F]502.7</b> is not reprinted here. It is a duplication of excerpts from the IFC.   | No specific requirements in the 2003 UMC, but provisions are in the IFC. |
| <b>ITEM 7</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent           </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.           </div> |  |



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| <b>ITEM 8</b><br><b>414.1.2 Materials.</b> The safe design of hazardous material occupancies is material dependent. Individual material requirements are also found in Sections 307 and 415, and in the <i>International Mechanical Code</i> and the <i>International Fire Code</i> . | <b>IMC §[F]502.9</b> is not reprinted here. It is a duplication of excerpts from the IFC chapters on specific hazardous materials. However, there are references in those IFC sections back to the IMC.   | No specific requirements in the 2003 UMC. |
| <b>ITEM 8</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div> |   |

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| <b>ITEM 9</b><br><b>414.3 Ventilation.</b> Rooms, areas or spaces of Group H in which explosive, corrosive, combustible, flammable or highly toxic dusts, mists, fumes, vapors or gases are or may be emitted due to the processing, use, handling or storage of materials shall be mechanically ventilated as required by the <i>International Fire Code</i> and the <i>International Mechanical Code</i> . | <p><b>§510</b> and its tables, generally, address requirements for hazardous exhaust systems. Their lengths preclude their printing on this chart.</p> <p><b>510.5.7 Ducts.</b> Hazardous exhaust duct systems shall extend directly to the exterior of the building and shall not extend into or through ducts and plenums.</p> | <p><b>2001 CBC §1202.2.3 Group H Occupancies.</b> Rooms, areas or spaces of Group H Occupancies in which explosive, corrosive, combustible, flammable or highly toxic dusts, mists, fumes, vapors or gases are or may be emitted due to the processing, use, handling or storage of materials shall be mechanically ventilated as required by the Fire Code and the Mechanical Code.</p> <p>Ducts conveying explosives or flammable vapors, fumes or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts or plenums.</p> <p><b>EXCEPTION:</b> Ducts conveying vapor of fumes having flammable constituents less than 25 percent of their lower flammability limit may pass through other spaces.</p> <p>Emissions generated at work stations shall be confined to the area in which they are generated as specified in the Fire Code and the Mechanical Code.</p> <p>The location of supply and exhaust openings shall be in accordance with the Mechanical Code. Exhaust air contaminated by highly toxic material shall be treated in accordance with the Fire Code.</p> <p><b>UMC 505.1 General.</b> A mechanical ventilation or exhaust system shall be installed to control, capture, and remove emissions generated from product use or handling when required by the Building Code or Fire Code and when such emissions result in a hazard to life or property. The design of the system shall be such that the emissions are confined to the area in which they are generated by air currents, hoods, or enclosures and shall be exhausted by a duct system to a safe location or treated by removing contaminants. Ducts conveying explosives or flammable vapors, fumes, or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums.</p> <p><b>Exception:</b> Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their lower flammability limit (LFL) may pass through other spaces.</p> <p><b>505.1.1</b> Incompatible materials shall not be conveyed in the same system.</p> <p><b>505.1.2</b> In systems conveying flammable vapors, gases, or mists, the concentration shall not exceed 25 percent of the lower flammability limit (LFL).</p> <p><b>Exception:</b> Higher concentrations shall be permitted if the exhaust system is designed and protected in accordance with the Standard on Explosion Prevention Systems in Chapter 17, using</p> |

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|  |   | <p>one or more of the following techniques:</p> <p>(a) Combustible concentration reduction</p> <p>(b) Oxidant concentration reduction</p> <p>(c) Deflagration suppression</p> <p>(d) Deflagration pressure containment</p> <p>Separate and distinct systems shall be provided for incompatible materials.</p> <p>Contaminated air shall not be recirculated to occupied areas unless contaminants have been removed. Air contaminated with explosive or flammable vapors, fumes, or dusts; flammable or toxic gases; or radioactive material shall not be recirculated.</p> |
| <b>ITEM 9</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <div> <input type="checkbox"/> The requirements are equivalent           </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.           </div> |   |

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| <p><b>ITEM 10</b><br/> <b>414.3 Ventilation.</b><br/> Emissions generated at workstations shall be confined to the area in which they are generated as specified in the <i>International Fire Code</i> and the <i>International Mechanical Code</i>.<br/> The location of supply and exhaust openings shall be in accordance with the <i>International Mechanical Code</i>.</p> | <p><b>[F] 502.10.1 Where required.</b> Exhaust ventilation systems shall be provided in the following locations in accordance with the requirements of this section and the <i>International Building Code</i>:<br/> . . .<br/> 2. Workstations: A ventilation system shall be provided to capture and exhaust fumes and vapors at workstations.</p> <p><b>510.5 Design.</b> Systems for removal of vapors, gases and smoke shall be designed by the constant velocity or equal friction methods. Systems conveying particulate matter shall be designed employing the constant velocity method.</p> <p><b>510.5.1 Balancing.</b> Systems conveying explosive or radioactive materials shall be prebalanced by duct sizing. Other systems shall be balanced by duct sizing with balancing devices, such as dampers. Dampers provided to balance air-flows shall be provided with securely fixed minimum-position blocking devices to prevent restricting flow below the required volume or velocity.</p> <p><b>510.5.2 Emission control.</b> The design of the system shall be such that the emissions are confined to the area in which they are generated by air currents, hoods or enclosures and shall be exhausted by a duct system to a safe location or treated by removing contaminants.</p> <p><b>510.5.3 Hoods required.</b> Hoods or enclosures shall be used where contaminants originate in a limited area of a space. The design of the hood or enclosure shall be such that air currents created by the exhaust systems will capture the contaminants and transport them directly to the exhaust duct.</p> <p><b>510.5.4 Contaminant capture and dilution.</b> The velocity and circulation of air in work areas shall be such that contaminants are captured by an airstream at the area where the emissions are generated and conveyed into a product-conveying duct system. Contaminated air from work areas where hazardous contaminants are generated shall be diluted below the thresholds specified in Section 510.2 with air that does not contain other hazardous contaminants.</p> <p><b>510.5.5 Makeup air.</b> Makeup air shall be provided at a rate approximately equal to the rate that air is exhausted by the hazardous exhaust system. Makeup-air intakes shall be located so as to avoid recirculation of contaminated air.</p> <p><b>510.5.6 Clearances.</b> The minimum clearance between hoods and combustible construction shall be the clearance required by the duct system.</p> | <p><b>2001 CBC §1202.2.3 Group H Occupancies.</b><br/> . . . Emissions generated at work stations shall be confined to the area in which they are generated as specified in the Fire Code and the Mechanical Code.</p> <p>See <b>UMC §505.1</b>, above</p> <p><b>505.2 Minimum Velocities and Circulation.</b> The velocity and circulation of air in work areas shall be such that contaminants are captured by an airstream at the area where the emissions are generated and conveyed into a product-conveying duct system. Mixtures within work areas where contaminants are generated shall be diluted below 25 percent of their lower explosive limit or lower flammability limit with air that does not contain other contaminants. The velocity of air within the duct shall be not less than set forth in Table 5-1.<br/> Systems for removal of vapors, gases, and smoke shall be designed by the constant velocity or equal friction methods. Systems conveying particulate matter shall be designed employing the constant velocity method. Systems conveying explosive or radioactive materials shall be prebalanced through duct sizing. Other systems may be designed with balancing devices such as dampers. Dampers provided to balance airflow shall be provided with securely fixed minimum-position blocking devices to prevent restricting flow below the required volume or velocity.</p> <p><b>505.3 Makeup Air.</b> Makeup air shall be provided to replenish air exhausted by the ventilation system. Makeup-air intakes shall be located so as to avoid recirculation of contaminated air within enclosures.</p> <p><b>505.4 Hoods and Enclosures.</b> Hoods and enclosures shall be used when contaminants originate in a concentrated area. The design of the hood or enclosure shall be such that air currents created by the exhaust systems will capture the contaminants and transport them directly to the exhaust duct. The volume of air shall be sufficient to dilute explosive or flammable vapors, fumes, or dusts as set forth in Section 505.2. Hoods of steel shall have a base metal thickness not less than 0.027 inch (0.69 mm) (No. 22 gage) for Class 1 and Class 5 metal duct systems; 0.033 inch (0.84 mm) (No. 20 gage) for hoods serving a Class 2 duct system; 0.044 inch (1.12 mm) (No. 18 gage) for hoods serving a Class 3 duct system; and 0.068 inch (1.73 mm) (No. 14 gage) for hoods</p> |

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|   | <b>510.5.7 Ducts.</b> Hazardous exhaust duct systems shall extend directly to the exterior of the building and shall not extend into or through ducts and plenums. | serving a Class 4 duct system.<br>Approved nonmetallic hoods and duct systems may be used for Class 5 corrosive systems when the corrosive mixture is nonflammable. Metal hoods used with Class 5 duct systems shall be protected with suitable corrosion-resistant material. Edges of hoods shall be rounded. The minimum clearance between hoods and combustible construction shall be the clearance required by the duct system. |
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| <b>ITEM 11</b><br><b>415.7.1.4 Explosion control.</b><br>Explosion control shall be provided as specified in the <i>International Fire Code</i> , or spaces shall be equipped with the equivalent mechanical ventilation complying with the <i>International Mechanical Code</i> . | <b>510.8.3 Explosion relief.</b> Systems exhausting potentially explosive mixtures shall be protected with an approved explosion relief system or by an approved explosion prevention system designed and installed in accordance with NFPA 69. An explosion relief system shall be designed to minimize the structural and mechanical damage resulting from an explosion or deflagration within the exhaust system. An explosion prevention system shall be designed to prevent an explosion or deflagration from occurring. | <b>506.4 Explosion Venting.</b> Ducts conveying explosive dusts shall have explosion vents, openings protected by antiflashback swing valves or rupture diaphragms. Openings to relieve explosive forces shall be located outside the building. When relief devices cannot provide sufficient pressure relief, ductwork shall be designed to withstand an internal pressure of not less than 100 pounds per square inch (689 kPa).<br>If a room or building contains a dust explosion hazard that is external to protected equipment, as defined in 2.2.3.1 of NFPA 654, such areas shall be provided with deflagration venting to a safe outside location. |
| <b>ITEM 11</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <div> <input type="checkbox"/> The requirements are equivalent </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate. </div>   |   |

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| <b>ITEM 12</b><br><b>415.7.2 Flammable and combustible liquids.</b> The storage, handling, processing and transporting of flammable and combustible liquids shall be in accordance with the <i>International Mechanical Code</i> and the <i>International Fire Code</i> . | <b>IMC §[F]502.9.5</b> is not reprinted here. It is a duplication of excerpts from the IFC chapters on specific flammable and combustible liquids. However, there are references in those IFC sections back to the IMC.   | No specific requirements in the 2003 UMC. General statement in §505.1. |
| <b>ITEM 12</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent           </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.           </div> |  |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON  |  |                                 |
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| IBC Code Section  | IMC Code Sections  | UMC Code Sections               |
| <b>ITEM 13</b><br><b>415.7.2.8 Room ventilation.</b><br>Storage tank areas storing Class I, II or IIIA liquids shall be provided with mechanical ventilation. The mechanical ventilation system shall be in accordance with the <i>International Mechanical Code</i> and the <i>International Fire Code</i> . | <b>[F] 502.9.5.1 Vaults.</b> Vaults that contain tanks of Class I liquids shall be provided with continuous ventilation at a rate of not less than 1 cfm/ft <sup>2</sup> of floor area [0.00508m <sup>3</sup> /(s • m <sup>2</sup> )], but not less than 150 cfm (4 m <sup>3</sup> /min). Failure of the exhaust airflow shall automatically shut down the dispensing system. The exhaust system shall be designed to provide air movement across all parts of the vault floor. Supply and exhaust ducts shall extend to a point not greater than 12 inches (305 mm) and not less than 3 inches (76 mm) above the floor. The exhaust system shall be installed in accordance with the provisions of NFPA 91. Means shall be provided to automatically detect any flammable vapors and to automatically shut down the dispensing system upon detection of such flammable vapors in the exhaust duct at a concentration of 25 percent of the LFL.<br>[This § is paraphrased from IFC §3404.2.8.9, which refers to the IMC for installation of the exhaust system.] | No requirement in the 2003 UMC. |
| <b>ITEM 13</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div>  |                                 |



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| IBC Code Section  | IMC Code Sections  | UMC Code Sections  |
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| <p><b>ITEM 14</b><br/> <b>415.7.3 Liquefied petroleum gas-distribution facilities.</b><br/> The design and construction of propane, butane, propylene, butylene and other liquefied petroleum gas-distribution facilities shall conform to the applicable provisions of Sections 415.7.3.1 through 415.7.3.5.2. The storage and handling of liquefied petroleum gas systems shall conform to the <i>International Fire Code</i>. The design and installation of piping, equipment and systems that utilize liquefied petroleum gas shall be in accordance with the <i>International Fuel Gas Code</i>. Liquefied petroleum gas-distribution facilities shall be ventilated in accordance with the <i>International Mechanical Code</i> and Section 415.7.3.1.</p> | <p><b>[F] 502.9.10 LP-gas distribution facilities.</b> LP-gas distribution facilities shall be ventilated in accordance with NFPA 58.<br/> <b>[F] 502.9.10.1 Portable container use.</b> Above-grade underfloor spaces or basements in which portable LP-gas containers are used or are stored awaiting use or re-sale shall be provided with an approved means of ventilation.<br/> <b>Exception:</b> Department of Transportation (DOT) specification cylinders with a maximum water capacity of 2.5 pounds (1 kg) for use in completely self-contained hand torches and similar applications. The quantity of LP-gas shall not exceed 20 pounds (9 kg).<br/> [This § is paraphrased from IFC §3809.7, which makes <u>no</u> reference back to the IMC.]</p> | <p><b>1313.0 Liquefied Petroleum Gas Facilities and Piping.</b> Liquefied petroleum gas facilities shall comply with NFPA 58, Liquefied Petroleum Gas Code.<br/> <b>304.6 Liquefied Petroleum Gas Facilities.</b> Containers, container valves regulating equipment, and appurtenances for the storage and supply of liquefied petroleum gas shall be installed in accordance with the Fire Code.<br/><br/> [This §, complete with the exception, is in 2001 UFC §8212.7. IFC §3809.7, thus appears not to deviate from current CA codes.]</p> |
| <p><b>ITEM 14</b><br/> <b>Committee Comments</b><br/> (Use additional pages as needed)</p>  | <div> <input type="checkbox"/> The requirements are equivalent </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate. </div>  |  |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON   |  |   |
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| IBC Code Section   | IMC Code Sections  | UMC Code Sections                         |
| <b>ITEM 15</b><br><b>415.7.4 Dry cleaning plants.</b> The construction and installation of dry cleaning plants shall be in accordance with the requirements of this code, the <i>International Mechanical Code</i> , the <i>International Plumbing Code</i> and NFPA 32. Dry cleaning solvents and systems shall be classified in accordance with the <i>International Fire Code</i> . | <p><b>[F] 502.6 Dry cleaning plants.</b> Ventilation in dry cleaning plants shall be adequate to protect employees and the public in accordance with this section and DOL 29 CFR Part 1910.1000, where applicable.</p> <p><b>[F] 502.6.1 Type II systems.</b> Type II dry cleaning systems shall be provided with a mechanical ventilation system that is designed to exhaust 1 cubic foot of air per minute for each square foot of floor area (1 cfm/ft<sup>2</sup>) [0.00508 m<sup>3</sup>/(s • m<sup>2</sup>)] in dry cleaning rooms and in drying rooms. The ventilation system shall operate automatically when the dry cleaning equipment is in operation and shall have manual controls at an approved location.</p> <p><b>[F] 502.6.2 Type IV and V systems.</b> Type IV and V dry cleaning systems shall be provided with an automatically activated exhaust ventilation system to maintain a minimum of 100 feet per minute (0.5 m/s) air velocity through the loading door when the door is opened.</p> <p><b>Exception:</b> Dry cleaning units are not required to be provided with exhaust ventilation where an exhaust hood is installed immediately outside of and above the loading door which operates at an airflow rate as follows:<br/> <math>Q = 100 \times ALD</math> <b>(Equation 5-1)</b><br/>           where:<br/> <math>Q</math> = Flow rate exhausted through the hood, cubic feet per minute.<br/> <math>ALD</math> = Area of the loading door, square feet.</p> <p><b>[F] 502.6.3 Spotting and pretreating.</b> Scrubbing tubs, scouring, brushing or spotting operations shall be located such that solvent vapors are captured and exhausted by the ventilating system.<br/>           [These §§ are paraphrased from IFC §§1204.2.1, 1205.2.3, 1205.3, and 1206.3.3, respectively. Only IFC §1204.2.1 refers back to the IMC.]</p> | No specific requirements in the 2003 UMC. |
| <b>ITEM 15</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |   |

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| IBC Code Section   | IMC Code Sections  | UMC Code Sections   |
| <b>ITEM 16</b><br><b>415.9.11.1 General.</b> Automatic fire sprinkler system protection shall be provided in exhaust ducts conveying vapors, fumes, mists or dusts generated from HPM in accordance with this section and the <i>International Mechanical Code</i> . | <b>510.7 Suppression required.</b> Ducts shall be protected with an approved automatic fire suppression system installed in accordance with the <i>International Building Code</i> .<br><b>Exceptions:</b><br>1. An approved automatic fire suppression system shall not be required in ducts conveying materials, fumes, mists and vapors that are nonflammable and noncombustible under all conditions and at any concentrations.<br>2. An approved automatic fire suppression system shall not be required in ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm). | <b>506.6 Fire Protection.</b> Sprinklers or other fire-protection devices shall be installed within ducts having a cross-sectional dimension exceeding ten (10) inches (254 mm) when the duct conveys flammable vapors or fumes. Sprinklers shall be installed at twelve (12) foot (3658 mm) intervals in horizontal ducts and at changes in direction. In vertical runs, sprinklers shall be installed at the top and at alternate floor levels. |
| <b>ITEM 16</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div>  |   |

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| IBC Code Section  | IMC Code Sections  | UMC Code Sections  |
| <p><b>ITEM 17</b></p> <p><b>416.3 Spraying spaces.</b> Spraying spaces shall be ventilated with an exhaust system to prevent the accumulation of flammable mist or vapors in accordance with the <i>International Mechanical Code</i>. Where such spaces are not separately enclosed, noncombustible spray curtains shall be provided to restrict the spread of flammable vapors.</p> | <p><b>IMC §[F]502.7</b> is not reprinted here. It is paraphrased from IFC §§1405.2, 1504.1.4, and 1504.2. However, there are references in those IFC sections back to the IMC.</p> | <p>The following §§s deal with velocities and duct termination. No other requirements in the 2003 UMC.</p> <p><b>505.2 Minimum Velocities and Circulation.</b> The velocity and circulation of air in work areas shall be such that contaminants are captured by an airstream at the area where the emissions are generated and conveyed into a product-conveying duct system. Mixtures within work areas where contaminants are generated shall be diluted below 25 percent of their lower explosive limit or lower flammability limit with air that does not contain other contaminants. The velocity of air within the duct shall be not less than set forth in Table 5-1.</p> <p>Systems for removal of vapors, gases, and smoke shall be designed by the constant velocity or equal friction methods. Systems conveying particulate matter shall be designed employing the constant velocity method. Systems conveying explosive or radioactive materials shall be prebalanced through duct sizing. Other systems may be designed with balancing devices such as dampers. Dampers provided to balance airflow shall be provided with securely fixed minimum-position blocking devices to prevent restricting flow below the required volume or velocity.</p> <p><b>506.9 Exhaust Outlets.</b> Outlets for exhausts that exceed 600°F (315°C) shall be in accordance with Table 5-7. The termination point for exhaust ducts discharging to the atmosphere shall be not less than the following:</p> <p><b>506.9.1</b> Ducts conveying explosive or flammable vapors, fumes, or dusts: thirty (30) feet (9144 mm) from property line; ten (10) feet (3048 mm) from openings into the building; six (6) feet (1829 mm) from exterior walls or roofs; thirty (30) feet (9144 mm) from combustible walls or openings into the building which are in the direction of the exhaust discharge; ten (10) feet (3048 mm) above adjoining grade.</p> <p><b>506.9.2</b> Other product-conveying outlets: ten (10) feet (3048 mm) from property line; three (3) feet (914 mm) from exterior wall or roof; ten (10) feet (3048 mm) from openings into the building; ten (10) feet (3048 mm) above adjoining grade.</p> |

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| <b>ITEM 17</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.  |   |
| <b>ITEM 18</b><br><b>SECTION 603</b><br><b>COMBUSTIBLE MATERIAL IN TYPE I AND II CONSTRUCTION</b><br><b>603.1 Allowable materials.</b><br>22. Materials exposed within plenums complying with Section 602 of the <i>International Mechanical Code</i> . | <b>602.2.1 Materials exposed within plenums.</b> Except as required by Sections 602.2.1.1 through 602.2.1.5, materials exposed within plenums shall be noncombustible or shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E 84.<br><b>Exceptions:</b><br>1. Rigid and flexible ducts and connectors shall conform to Section 603.<br>2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.<br>3. This section shall not apply to materials exposed within plenums in one- and two-family dwellings.<br>4. This section shall not apply to smoke detectors.<br>5. Combustible materials enclosed in approved gypsum board assemblies or enclosed in materials listed and labeled for such application.<br><b>602.2.1.1 Wiring.</b> Combustible electrical or electronic wiring methods and materials, optical fiber cable, and optical fiber raceway exposed within a plenum shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread not greater than 5 feet (1524 mm) when tested in accordance with NFPA 262. Only type OFNP (plenum rated nonconductive optical fiber cable) shall be | <b>602.2 Combustibles within Ducts or Plenums.</b> Materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed rating index of not more than 50 when tested as a composite product in accordance with ASTM E84 or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, or as a composite product in accordance with NFPA 255 Standard Method of Test of Surface Burning Characteristics of Building Materials, ASTM E 84-2001 or ANSI/UL 723-96.:<br><b>Exceptions:</b><br>(1) Return-air and outside-air ducts, plenums, or concealed spaces that serve a dwelling unit shall be permitted to be of combustible construction.<br>(2) Air filters meeting the requirements of Sections 312.0 and 503.3.<br>(3) Water evaporation media in an evaporative cooler.<br>(4) Charcoal filters when protected with an approved fire suppression system.<br>(5) Electrical wiring in plenums shall comply with NFPA 70, National Electrical Code. Flame propagation and smoke production characteristics of exposed electric cables installed in concealed space used as air plenums shall:<br>(a) Exhibit a flame travel of five (5) feet (1524 mm) or less, and |

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|  | <p>installed in plenum-rated optical fiber raceways. Wiring, cable, and raceways addressed in this section shall be listed and labeled as plenum rated and shall be installed in accordance with ICC <i>Electrical Code</i>.</p> <p><b>602.2.1.2 Fire sprinkler piping.</b> Plastic fire sprinkler piping exposed within a plenum shall be used only in wet pipe systems and shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1887. Piping shall be listed and labeled.</p> <p><b>602.2.1.3 Pneumatic tubing.</b> Combustible pneumatic tubing exposed within a plenum shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1820. Combustible pneumatic tubing shall be listed and labeled.</p> <p><b>602.2.1.4 Combustible electrical equipment.</b> Combustible electrical equipment exposed within a plenum shall have a peak rate of heat release not greater than 100 kilowatts, a peak optical density not greater than 0.50 and an average optical density not greater than 0.15 when tested in accordance with UL 2043. Combustible electrical equipment shall be listed and labeled.</p> <p><b>602.2.1.5 Foam plastic insulation.</b> Foam plastic insulation used as wall or ceiling finish in plenums shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 and shall also comply with Section 602.2.1.5.1, 602.2.1.5.2 or 602.2.1.5.3.</p> <p><b>602.2.1.5.1 Separation required.</b> The foam plastic insulation shall be separated from the plenum by a thermal barrier complying with Section 2603.4 of the <i>International Building Code</i>.</p> <p><b>602.2.1.5.2 Approval.</b> The foam plastic insulation shall be approved based on tests conducted in accordance with Section 2603.8 of the <i>International Building Code</i>.</p> <p><b>602.2.1.5.3 Covering.</b> The foam plastic insulation shall be covered by corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm).</p> | <p>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with NFPA 262, Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.</p> <p>(c) Wiring meeting these requirements shall be listed and labeled as plenum cable as required by the National Electrical Code.</p> <p>(6) Nonmetallic fire sprinkler piping in plenums shall be listed and shall meet the following requirements:</p> <p>(a) Exhibit flame travel of five (5) feet (1524 mm) or less, and</p> <p>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with UL 1887, Standard for Fire Test of Plastic Sprinkler Pipe for Flame and Smoke Characteristics.</p> <p>(7) Nonmetallic pneumatic tubing in plenums shall be listed and shall meet the following requirements:</p> <p>(a) Exhibit flame travel of five (5) feet (1524 mm) or less, and</p> <p>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with UL 1820, Standard for Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics.</p> <p>(8) Loudspeakers and recessed luminaries, including their assemblies and accessories, in plenums shall be listed and shall meet the following requirements:</p> <p>(a) Have a peak rate of heat release not greater than 100 kilowatts.</p> <p>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with UL 2043, Standard for Fire Test for Heat and Visible Smoke Release of Discrete Products and Their Accessories Installed in Air-Handling Spaces.</p> <p>(9) Smoke detectors.</p> |

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| <b>ITEM 18</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.  |   |
| <b>ITEM 19</b><br><b>603.1.1 Ducts.</b> The use of nonmetallic ducts shall be permitted when installed in accordance with the limitations of the <i>International Mechanical Code</i> . | <b>603.5 Nonmetallic ducts.</b> Nonmetallic ducts shall be constructed with Class 0 or Class 1 duct material in accordance with UL 181. Fibrous duct construction shall conform to the SMACNA <i>Fibrous Glass Duct Construction Standards</i> or NAIMA <i>Fibrous Glass Duct Construction Standards</i> . The maximum air temperature within nonmetallic ducts shall not exceed 250_F (121_C).<br><b>603.5.1 Gypsum ducts.</b> The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125_F (52_C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Air ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.<br><b>603.6 Flexible air ducts and flexible air connectors.</b> Flexible air ducts, both metallic and nonmetallic, shall comply with Sections 603.6.1, 603.6.1.1, 603.6.3 and 603.6.4. Flexible air connectors, both metallic and nonmetallic, shall comply with Sections 606.6.2 through 603.6.4.<br><b>603.6.1 Flexible air ducts.</b> Flexible air ducts, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such ducts shall be listed and labeled as Class 0 or Class 1 flexible air ducts and shall be installed in accordance with Section 304.1.<br><b>603.6.1.1 Duct length.</b> Flexible air ducts shall not be limited in length. | <b>506.1 Materials.</b> Materials used in product-conveying duct systems shall be suitable for the intended use and shall be of metal.<br><b>Exceptions:</b><br>(1) Asbestos-cement, concrete, clay, or ceramic materials may be used when it is shown that these materials will be equivalent to metal ducts installed in accordance with this chapter.<br>(2) Ducts serving a Class 5 system may be constructed of approved nonmetallic material when the corrosive characteristics of the material being conveyed make a metal system unsuitable and when the mixture being conveyed is nonflammable. Approved nonmetallic material shall be either a listed product having a flame-spread index of twenty-five (25) or less and a smoke-developed rating of fifty (50) or less on both inside and outside surfaces without evidence of continued progressive combustion, or shall have a flame-spread index of twenty-five (25) or less and shall be installed with an automatic fire-sprinkler protection system inside the duct.<br>(3) Ducts used in central vacuum cleaning systems within a dwelling unit may be of PVC pipe. Penetrations of fire walls or floor-ceiling or roof-ceiling assemblies shall comply with the Building Code. Copper or ferrous pipes or conduits extending from within the separation between a garage and dwelling unit to |

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|  | <p><b>603.6.2 Flexible air connectors.</b> Flexible air connectors, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such connectors shall be listed and labeled as Class 0 or Class 1 flexible air connectors and shall be installed in accordance with Section 304.1.</p> <p><b>603.6.2.1 Connector length.</b> Flexible air connectors shall be limited in length to 14 feet (4267 mm).</p> <p><b>603.6.2.2 Connector penetration limitations.</b> Flexible air connectors shall not pass through any wall, floor or ceiling.</p> <p><b>603.6.3 Air temperature.</b> The design temperature of air to be conveyed in flexible air ducts and flexible air connectors shall be less than 250_F (121_C).</p> <p><b>603.6.4 Flexible air duct and air connector clearance.</b> Flexible air ducts and air connectors shall be installed with a minimum clearance to an appliance as specified in the appliance manufacturer's installation instructions.</p> | <p>the central vacuuming unit may be used.</p> <p><b>602.3 Factory-Made Air Ducts.</b> Factory-made air ducts shall be approved for the use intended or shall conform to the requirements of the referenced standard for air ducts in Chapter 17, Part II. Each portion of a factory-made air duct system shall be identified by the manufacturer with a label or other suitable identification indicating compliance with the referenced standard for air ducts in Chapter 17, Part II, and its class designation. These ducts shall be listed and shall be installed in accordance with the terms of their listing and the requirements of UMC Standard No. 6-5. Flexible air connectors are not permitted.</p> <p><b>604.2 Factory-Made Air Ducts.</b> Listed Class 0 or Class 1 factory-made air ducts may be installed in any occupancy covered by this code.</p> <p>Factory-made air ducts shall not be used for vertical risers in air-duct systems serving more than two stories. Such ducts shall not penetrate construction where fire dampers are required.</p> <p>Factory-made air ducts shall be installed with at least four (4) inches (102 mm) of separation from earth, except when installed as a liner inside of concrete, tile, or metal pipe; they shall be protected from physical damage.</p> <p>The temperature of the air to be conveyed in any of these classes of ducts shall not exceed 250°F (122°C).</p> |
| <p><b>ITEM 19</b><br/> <b>Committee Comments</b><br/>           (Use additional pages as needed)</p> | <p><input type="checkbox"/> The requirements are equivalent</p> <p><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The referenced sections are not readily determinate.</p>  |  |



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| IBC Code Section   | IMC Code Sections   | UMC Code Sections  |
| <b>ITEM 20</b><br><b>603.1.2 Piping.</b> The use of combustible piping materials shall be permitted when installed in accordance with the limitations of the <i>International Mechanical Code</i> and the <i>International Plumbing Code</i> . | <b>602.2.1.2 Fire sprinkler piping.</b> Plastic fire sprinkler piping exposed within a plenum shall be used only in wet pipe systems and shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1887. Piping shall be listed and labeled.<br><b>602.2.1.3 Pneumatic tubing.</b> Combustible pneumatic tubing exposed within a plenum shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1820. Combustible pneumatic tubing shall be listed and labeled. | <b>602.2 Combustibles within Ducts or Plenums.</b><br>. . .<br>(6) Nonmetallic fire sprinkler piping in plenums shall be listed and shall meet the following requirements:<br>(a) Exhibit flame travel of five (5) feet (1524 mm) or less, and<br>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with UL 1887, Standard for Fire Test of Plastic Sprinkler Pipe for Flame and Smoke Characteristics.<br>(7) Nonmetallic pneumatic tubing in plenums shall be listed and shall meet the following requirements:<br>(a) Exhibit flame travel of five (5) feet (1524 mm) or less, and<br>(b) Produce smoke having an average optical density not greater than 0.15 and having a peak optical density of 0.5 or less when tested in accordance with UL 1820, Standard for Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics. |
| <b>ITEM 20</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div>   |  |

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| IBC Code Section  | IMC Code Sections  | UMC Code Sections  |
| <p><b>ITEM 21</b></p> <p><b>SECTION 707</b></p> <p><b>SHAFT ENCLOSURES</b></p> <p><b>707.2 Shaft enclosure required.</b><br/>Openings through a floor/ceiling assembly shall be protected by a shaft enclosure complying with this section.</p> <p><b>Exceptions:</b><br/>4. A shaft enclosure is not required for penetrations by ducts protected in accordance with Section 712.4. Grease ducts shall be protected in accordance with the <i>International Mechanical Code</i>.</p> | <p><b>506.3.10 Grease duct enclosure.</b> A grease duct serving a Type I hood that penetrates a ceiling, wall or floor shall be enclosed from the point of penetration to the outlet terminal. A duct shall penetrate exterior walls only at locations where unprotected openings are permitted by the <i>International Building Code</i>. Ducts shall be enclosed in accordance with the <i>International Building Code</i> requirements for shaft construction. The duct enclosure shall be sealed around the duct at the point of penetration and vented to the outside of the building through the use of weather-protected openings. Clearance from the duct to the interior surface of enclosures of combustible construction shall be not less than 18 inches (457 mm). Clearance from the duct to the interior surface of enclosures of noncombustible construction or gypsum wallboard attached to noncombustible structures shall be not less than 6 inches (152 mm). The duct enclosure shall serve a single grease exhaust duct system and shall not contain any other ducts, piping, wiring or systems.</p> <p><b>Exceptions:</b><br/>1. The shaft enclosure provisions of this section shall not be required where a duct penetration is protected with a through-penetration firestop system classified in accordance with ASTM E 814 and having an “F” and “T” rating equal to the fire-resistance rating of the assembly being penetrated and where the surface of the duct is continuously covered on all sides from the point at which the duct penetrates a ceiling, wall or floor to the outlet terminal with a classified and labeled material, system, method of construction or product specifically evaluated for such purpose, in accordance with a nationally recognized standard for such enclosure materials. Exposed duct wrap systems shall be protected where subject to physical damage.<br/>2. A duct enclosure shall not be required for a grease duct that penetrates only a nonfire-resistance-rated roof/ceiling assembly.</p> | <p><b>510.7 Interior Installations.</b></p> <p><b>510.7.1</b> In all buildings more than one story in height, and in one-story buildings where the roof-ceiling assembly is required to have a fire resistance rating, the ducts shall be enclosed in a continuous enclosure extending from the lowest fire-rated ceiling or floor above the hood, through any concealed spaces, to or through the roof so as to maintain the integrity of the fire separations required by the applicable building code provisions. The enclosure shall be sealed around the duct at the point of penetration of the lowest fire-rated ceiling or floor above the hood in order to maintain the fire resistance rating of the enclosure and shall be vented to the exterior of the building through weather-protected openings.</p> <p><b>Exception:</b> The continuous enclosure provisions shall not be required where a field-applied grease duct enclosure or a factory-built grease duct enclosure (see Section 507.2.3) is protected with a listed duct through-penetration protection system equivalent to the fire resistance rating of the assembly being penetrated, and the materials are installed in accordance with the conditions of their listings and the manufacturers’ instructions and are acceptable to the Authority Having Jurisdiction.</p> <p><b>510.7.2</b> The enclosure required in Section 510.7.1 shall conform to Sections 510.7.2.1 through 510.7.2.3.</p> <p><b>510.7.2.1</b> If the building is less than four stories in height, the enclosure wall shall have a fire resistance rating of not less than 1 hour.</p> <p><b>510.7.2.2</b> If the building is four stories or more in height, the enclosure wall shall have a fire resistance rating of not less than 2 hours.</p> <p><b>510.7.2.3</b> Clearance from the duct or the exhaust fan to the interior surface of enclosures of combustible construction shall be not less than 18 in. (457.2 mm), and clearance from the duct to the interior surface of enclosures of noncombustible or limited-combustible construction shall be not less than 6 in. (152.4 mm). Provisions for reducing clearances as described in Section 507.2 are not applicable to enclosures.</p> <p><b>Exception:</b> Clearance from the outer surfaces of field-applied grease duct enclosures and factory-built grease duct enclosures to the interior surfaces of construction installed around them shall be permitted to be reduced where the field-applied grease duct enclosure materials and factory-built grease duct enclosures are installed in accordance with the conditions of their listings and manufacturers’ instructions and are acceptable to the Authority</p> |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON |                   |   |
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| IBC Code Section                         | IMC Code Sections | UMC Code Sections   |
|  |                   | <p>Having Jurisdiction.</p> <p><b>510.7.3</b> For field-applied grease duct enclosures and factory-built grease duct enclosures, the materials and products shall conform to Sections 510.7.3.1 through 510.7.3.3.</p> <p><b>510.7.3.1</b> Field-applied grease duct enclosures and factory-built grease duct enclosures shall demonstrate that they provide sufficient mechanical and structural integrity, resiliency, and stability when subjected to expected building environmental conditions, duct movement under general operating conditions, and duct movement due to interior and exterior fire conditions.</p> <p><b>510.7.3.2</b> Measures shall be taken to prevent physical damage to any covering or enclosure material. Any damage to the covering or enclosure shall be repaired and the covering or enclosure restored to meet its intended listing and fire-resistive rating and to be acceptable to the Authority Having Jurisdiction.</p> <p><b>510.7.3.3</b> In the event of a fire within a kitchen exhaust system, the duct, the enclosure, or the covering directly applied to the duct shall be inspected by qualified personnel to determine whether the duct, the enclosure, and the covering directly applied to the duct are structurally sound, capable of maintaining their fire protection functions, suitable for continued operation, and acceptable to the Authority Having Jurisdiction.</p> <p><b>510.7.4</b> For listed grease ducts, see Section 510.4.</p> <p><b>510.7.5</b> If openings in the enclosure walls are provided, they shall be protected by approved self-closing fire doors of proper rating. Fire doors shall be installed in accordance with NFPA 80, Standard for Fire Doors and Fire Windows. Openings on other listed materials or products shall be clearly identified and labeled according to the terms of the listing and the manufacturer's instructions and shall be acceptable to the Authority Having Jurisdiction. The panels shall be readily accessible.</p> <p><b>510.7.6</b> Each duct system shall constitute an individual system serving only exhaust hoods in one fire zone on one floor. Multiple ducts shall not be permitted in a single enclosure unless acceptable to the Authority Having Jurisdiction.</p> |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON  |  |                                 |
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| IBC Code Section  | IMC Code Sections  | UMC Code Sections               |
| <b>ITEM 21</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                                 |
| <b>ITEM 22</b><br><b>716.2.2 Hazardous exhaust ducts.</b><br>Fire dampers for hazardous exhaust duct systems shall comply with the <i>International Mechanical Code</i> . | <b>607.2.2 Hazardous exhaust ducts.</b> Fire dampers for hazardous exhaust duct systems shall comply with Section 510.<br>[Commission staff finds no discussion of fire dampers in §510, only balance dampers.]  | No requirement in the 2003 UMC. |
| <b>ITEM 22</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                                 |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON   |   |   |
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| IBC Code Section   | IMC Code Sections   | UMC Code Sections   |
| <p><b>ITEM 23</b><br/> <b>716.5.4 Fire partitions.</b> Duct penetrations in fire partitions shall be protected with approved fire dampers installed in accordance with their listing.<br/> <b>Exceptions:</b> In occupancies other than Group H, fire dampers are not required where any of the following apply:<br/> 1. The partitions are tenant separation and corridor walls in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the duct is protected as a through penetration in accordance with Section 712.<br/> 2. The duct system is constructed of approved materials in accordance with the <i>International Mechanical Code</i> and the duct penetrating the wall meets all of the following minimum requirements:<br/> ...<br/> 2.2. The duct shall be constructed of steel a minimum of 0.0217 inch (0.55 mm) in thickness.</p> | <p><b>603.4 Metallic ducts.</b> All metallic ducts shall be constructed as specified in the <i>SMACNA HVAC Duct Construction Standards—Metal and Flexible</i>.<br/> <b>Exception:</b> Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.4.</p>  | <p><b>602.1 General.</b> Supply air, return air, and outside air for heating, cooling, or evaporative cooling systems shall be conducted through duct systems constructed of metal as set forth in Tables 6-1, 6-2, 6-3, 6-4, 6-7, 6-8, 6-9, and 6-10, or metal ducts complying with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Rectangular ducts in excess of 2 inches w.g. shall comply with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Ducts, plenums, and fittings may be constructed of asbestos cement, concrete, clay, or ceramics when installed in the ground or in a concrete slab, provided the joints are tightly sealed.</p> |
| <p><b>ITEM 23</b><br/> <b>Committee Comments</b><br/> (Use additional pages as needed)</p>   | <p><input type="checkbox"/> The requirements are equivalent</p> <p><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The referenced sections are not readily determinate.</p> |   |

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| IBC Code Section   | IMC Code Sections   | UMC Code Sections  |
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| <p><b>ITEM 24</b></p> <p><b>716.6.1 Through penetrations.</b> In occupancies other than Groups I-2 and I-3, a duct and air transfer opening system constructed of approved materials in accordance with the <i>International Mechanical Code</i> that penetrates a fire-resistance-rated floor/ceiling assembly that connects not more than two stories is permitted without shaft enclosure protection provided a fire damper is installed at the floor line.</p> <p><b>716.6.2 Membrane penetrations.</b> Where duct systems constructed of approved materials in accordance with the <i>International Mechanical Code</i> penetrate a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly, shaft enclosure protection is not required provided an approved ceiling radiation damper is installed at the ceiling line.</p> <p><b>716.6.3 Non fire-resistance-rated assemblies.</b> Duct systems constructed of approved materials in accordance with the <i>International Mechanical Code</i> that penetrate non fire-resistance-rated floor assemblies and that connect not more than two stories are permitted without shaft enclosure protection provided that the annular space between the assembly and the penetrating duct is filled with an approved noncombustible material to resist the free passage of flame and the products of combustion. Duct systems constructed of approved materials in accordance with the <i>International Mechanical Code</i> that</p> | <p><b>603.4 Metallic ducts.</b> All metallic ducts shall be constructed as specified in the <i>SMACNA HVAC Duct Construction Standards—Metal and Flexible</i>.</p> <p><b>Exception:</b> Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.4.</p> <p><b>603.5 Nonmetallic ducts.</b> Nonmetallic ducts shall be constructed with Class 0 or Class 1 duct material in accordance with UL 181. Fibrous duct construction shall conform to the <i>SMACNA Fibrous Glass Duct Construction Standards</i> or <i>NAIMA Fibrous Glass Duct Construction Standards</i>. The maximum air temperature within nonmetallic ducts shall not exceed 250°F (121°C).</p> <p><b>603.5.1 Gypsum ducts.</b> The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Air ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.</p> <p><b>603.6 Flexible air ducts and flexible air connectors.</b> Flexible air ducts, both metallic and nonmetallic, shall comply with Sections 603.6.1, 603.6.1.1, 603.6.3 and 603.6.4. Flexible air connectors, both metallic and nonmetallic, shall comply with Sections 606.6.2 through 603.6.4.</p> <p><b>603.6.1 Flexible air ducts.</b> Flexible air ducts, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such ducts shall be listed and labeled as Class 0 or Class 1 flexible air ducts and shall be installed in accordance with Section 304.1.</p> <p><b>603.6.1.1 Duct length.</b> Flexible air ducts shall not be limited in length.</p> <p><b>603.6.2 Flexible air connectors.</b> Flexible air connectors, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such connectors shall be listed and labeled as Class 0 or Class 1 flexible air connectors and shall be installed in accordance with Section 304.1.</p> <p><b>603.6.2.1 Connector length.</b> Flexible air connectors shall be limited in length to 14 feet (4267 mm).</p> <p><b>603.6.2.2 Connector penetration limitations.</b> Flexible air connectors shall not pass through any wall, floor or ceiling.</p> <p><b>603.6.3 Air temperature.</b> The design temperature of air to be conveyed in flexible air ducts and flexible air connectors shall be less than 250°F (121°C).</p> <p><b>603.6.4 Flexible air duct and air connector clearance.</b> Flexible air ducts and air connectors shall be installed with a</p> | <p><b>602.1 General.</b> Supply air, return air, and outside air for heating, cooling, or evaporative cooling systems shall be conducted through duct systems constructed of metal as set forth in Tables 6-1, 6-2, 6-3, 6-4, 6-7, 6-8, <b>6-9</b>, and 6-10, or metal ducts complying with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Rectangular ducts in excess of 2 inches w.g. shall comply with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Ducts, plenums, and fittings may be constructed of asbestos cement, concrete, clay, or ceramics when installed in the ground or in a concrete slab, provided the joints are tightly sealed.</p> <p><b>602.3 Factory-Made Air Ducts.</b> Factory-made air ducts shall be approved for the use intended or shall conform to the requirements of the referenced standard for air ducts in Chapter 17, Part II. Each portion of a factory-made air duct system shall be identified by the manufacturer with a label or other suitable identification indicating compliance with the referenced standard for air ducts in Chapter 17, Part II, and its class designation. These ducts shall be listed and shall be installed in accordance with the terms of their listing and the requirements of UMC Standard No. 6-5. Flexible air connectors are not permitted.</p> <p><b>602.4 Joints and Seams of Ducts.</b> Joints of duct systems shall be made substantially airtight by means of tapes, mastics, gasketing, or other means.</p> <p>Crimp joints for round ducts shall have a contact lap of at least 1-1/2 inch (38 mm) and shall be mechanically fastened by means of at least three sheet-metal screws equally spaced around the joint, or an equivalent fastening method.</p> <p>Joints and seams for 0.016 inch (0.41 mm) (No. 28 gauge) and 0.013 inch (0.33 mm) (No. 30 gage) residential rectangular ducts shall be as specified in Table 6-1 for 0.019 inch (0.48 mm) (No. 26 gage) material.</p> <p>Joints and seams for rectangular duct systems shall be as specified in Table 6-1.</p> <p>Joints and seams for flat oval ducts and round ducts in other than single-dwelling units shall be as specified in Table 6-8.</p> <p>Joints and seams and all reinforcements for factory-made air ducts and plenums shall meet with the conditions of prior approval in accordance with the installation instructions that shall accompany the product. Closure systems for rigid air ducts and plenums shall be listed in accordance with UL 181A, Standard for Closure Systems for Use with Rigid Air Ducts and Air Connectors.</p> |



| 2003 IMC – 2003 UMC REFERENCE COMPARISON  |  |                   |
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| IBC Code Section  | IMC Code Sections  | UMC Code Sections |
| <b>ITEM 25</b><br><b>717.5 Combustibles in concealed spaces in Type I or II construction.</b> Combustibles shall not be permitted in concealed spaces of buildings of Type I or II construction.<br><b>Exceptions:</b><br>1. Combustible materials in accordance with Section 603.<br>2. Combustible materials complying with Section 602 of the <i>International Mechanical Code</i> .<br>3. Class A interior finish materials.<br>4. Combustible piping within partitions or enclosed shafts installed in accordance with the provisions of this code. Combustible piping shall be permitted within concealed ceiling spaces where installed in accordance with the <i>International Mechanical Code</i> and the <i>International Plumbing Code</i> . | See Item 18 above  | See Item 18 above |
| <b>ITEM 25</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                   |



| 2003 IMC – 2003 UMC REFERENCE COMPARISON   |  |                    |
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| IBC Code Section   | IMC Code Sections  | UMC Code Sections  |
| <b>ITEM 26</b><br><b>719.1 General.</b> Insulating materials, including facings such as vapor retarders and vapor-permeable membranes, similar coverings, and all layers of single and multilayer reflective foil insulations, shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture, or other atmospheric conditions shall not be permitted.<br><b>Exceptions:</b><br>1. Fiberboard insulation shall comply with Chapter 23.<br>2. Foam plastic insulation shall comply with Chapter 26.<br>3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the <i>International Mechanical Code</i> . | See Item 18 above.   | See Item 18 above. |
| <b>ITEM 26</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                    |

| 2003 IMC – 2003 UMC REFERENCE COMPARISON   |  |   |
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| IBC Code Section   | IMC Code Sections  | UMC Code Sections   |
| <b>ITEM 27</b><br><b>[F] 903.2.12.1 Ducts conveying hazardous exhausts.</b> Where required by the <i>International Mechanical Code</i> , automatic sprinklers shall be provided in ducts conveying hazardous exhaust, or flammable or combustible materials.<br><b>Exception:</b> Ducts in which the largest cross-sectional diameter of the duct is less than 10 inches (254 mm). | <b>510.7 Suppression required.</b> Ducts shall be protected with an approved automatic fire suppression system installed in accordance with the <i>International Building Code</i> .<br><b>Exceptions:</b><br>1. An approved automatic fire suppression system shall not be required in ducts conveying materials, fumes, mists and vapors that are nonflammable and noncombustible under all conditions and at any concentrations.<br>2. An approved automatic fire suppression system shall not be required in ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).   | <b>506.6 Fire Protection.</b> Sprinklers or other fire-protection devices shall be installed within ducts having a cross-sectional dimension exceeding ten (10) inches (254 mm) when the duct conveys flammable vapors or fumes. Sprinklers shall be installed at twelve (12) foot (3658 mm) intervals in horizontal ducts and at changes in direction. In vertical runs, sprinklers shall be installed at the top and at alternate floor levels.   |
| <b>ITEM 27</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |   |
| <b>ITEM 28</b><br><b>[F] 904.2.1 Hood system suppression.</b> Each required commercial kitchen exhaust hood and duct system required by the <i>International Fire Code</i> or the <i>International Mechanical Code</i> to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code.                       | <b>507.2 Where required.</b> A Type I or Type II hood shall be installed at or above all commercial cooking appliances in accordance with Sections 507.2.1 and 507.2.2. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed.<br><b>507.2.1 Type I hoods.</b> Type I hoods shall be installed where cooking appliances produce grease or smoke, such as occurs with griddles, fryers, broilers, ovens, ranges and wok ranges.<br><br><b>SECTION 509</b><br><b>FIRE SUPPRESSION SYSTEMS</b><br><b>509.1 Where required.</b> Commercial cooking appliances required by Section 507.2.1 to have a Type I hood shall be provided with an approved automatic fire suppression system complying with the <i>International Building Code</i> and the <i>International Fire Code</i> .<br>[§904 in both IBC and IFC describe the system.] | <b>502.0 Definitions.</b><br><b>HOOD.</b> An air-intake device connected to a mechanical exhaust system for collecting and removing grease, vapors, fumes, smoke, steam, heat, or odors from commercial food heat-processing equipment.<br><b>Fixed Baffle.</b> A listed unitary exhaust hood design where the grease removal device is a nonremovable assembly that contains an integral fire-activated water-wash fire-extinguishing system listed for this purpose.<br><b>Type I</b> is a kitchen hood for collecting and removing grease and smoke.<br><b>Type II</b> is a general kitchen hood for collecting and removing steam, vapor, heat, or odors.<br><br>[UMC §513 describes the fire-extinguishing equipment.] |

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| <b>ITEM 28</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent  |                   |
|  | <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:                |                   |
|  | <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code: |                   |
|  | <input type="checkbox"/> The referenced sections are not readily determinate.   |                   |
| <b>ITEM 29</b><br><b>[F] 904.11 Commercial cooking systems.</b> The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Pre engineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire-extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire-extinguishing systems of the |   |                   |



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| IBC Code Section   | IMC Code Sections   | UMC Code Sections   |
| <p><b>ITEM 30</b></p> <p><b>[F] 908.6 Refrigerant detector.</b> Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values for the refrigerant classification indicated in the <i>International Mechanical Code</i>. Detectors and alarms shall be placed in approved locations.</p> <p><b>Exception:</b> Detectors are not required in ammonia system machinery rooms equipped with a vapor detector in accordance with the <i>International Mechanical Code</i>.</p> | <p><b>[F] 1105.3 Refrigerant detector.</b> Refrigerant detectors in machinery rooms shall be provided as required by the <i>International Fire Code</i>.<br/>[Refrigeration classifications are listed on IMC Table 1103.1.]</p> <p><b>1106.3 Ammonia room ventilation.</b> Ventilation systems in ammonia machinery rooms shall be operated continuously.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. Machinery rooms equipped with a vapor detector that will automatically start the ventilation system and actuate an alarm at a detection level not to exceed 1,000 ppm; or</li> <li>2. Machinery rooms conforming to the Class 1, Division 2, hazardous location classification requirements of NFPA 70.</li> </ol> | <p><b>1107.4 Refrigerant-Vapor Alarms.</b> Machinery rooms shall have approved refrigerant-vapor detectors located in an area where refrigerant from a leak is likely to concentrate and that will activate visual and audible alarms. Alarms shall be activated at a value not greater than one-half the immediately dangerous to life or health (IDLH), or measurement consistent therewith; the PEL, or measurement consistent therewith; or 25 percent of the LFL, whichever is less.</p> <p><b>1121.1 General.</b> When required by this chapter, approved refrigerant-vapor detection and alarm systems shall utilize alarm signaling devices providing a sound pressure level of at least 15 Db above the operating ambient noise sound pressure level of the space in that they are installed and providing an approved, distinctive visual alarm. Alarms shall be activated within the space and as required in Section 1121.3 whenever the refrigerant vapor PEL is exceeded. In other than machinery rooms, such systems shall also automatically stop the flow of refrigerant to evaporators within the space and stop the flow of refrigerant in all supply lines leaving the machinery room whenever the refrigerant vapor concentration is detected at or above 50 percent of the IDLH or 25 percent of the LEL. Detection of refrigerant vapor concentrations at or above 25 percent of the LEL shall automatically de-energize all electrical power within the space that does not meet the requirement for a Class I, Division 1, Group D electrical installation.</p> <p><b>1121.2 Power and Supervision.</b> Detection and alarm systems shall be powered and supervised as required for fire alarm systems in the Fire Code.</p> <p><b>1121.3 Annunciation.</b> Detection and alarm systems shall be annunciated for all refrigerants at an approved location in accordance with the Fire Code.</p> <p><b>1121.4 Installation, Maintenance, and Testing.</b> Detection and alarm systems shall be installed, maintained, and tested in accordance with the Fire Code.<br/>[Refrigeration classifications are listed on UMC Table 11-1.]<br/>No ammonia requirements are in the 2003 UMC.</p> |

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| IBC Code Section   | IMC Code Sections  | UMC Code Sections  |
| <b>ITEM 30</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |  |
| <b>ITEM 31</b><br><b>SECTION 909</b><br><b>SMOKE CONTROL SYSTEMS</b><br><b>909.1 Scope and purpose.</b> This section applies to mechanical or passive smoke control systems when they are required by other provisions of this code. The purpose of this section is to establish minimum requirements for the design, installation and acceptance testing of smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants. These provisions are not intended for the preservation of contents, the timely restoration of operations or for assistance in fire suppression or overhaul activities. Smoke control systems regulated by this section serve a different purpose than the smoke- and heat-venting provisions found in Section 910. Mechanical smoke control systems shall not be considered exhaust systems under Chapter 5 of the <i>International Mechanical Code</i> . | <b>CHAPTER 5</b><br><b>EXHAUST SYSTEMS</b> , except for §513, which describes smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants.  | <b>504.1 Makeup and Exhaust-Air Ducts.</b> Environmental air ducts not regulated by other provisions of this code shall comply with this section. Ducts shall be substantially airtight and shall comply with the provisions of Chapter 6. Exhaust ducts shall not extend into or through ducts or plenums. Exhaust ducts shall terminate outside the building and shall be equipped with back-draft dampers. Environmental air ducts which have an alternate function as a part of an approved smoke-control system do not require design as Class 1 product-conveying ducts.<br><br>No other requirements in the 2003 UMC. |

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| <b>ITEM 31</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |   |
| <b>ITEM 32</b><br><b>909.10.2 Ducts.</b> Duct materials and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported in accordance with the <i>International Mechanical Code</i> . Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire-resistance-rated structural elements of the building by substantial, noncombustible supports.<br><b>Exception:</b> Flexible connections (for the purpose of vibration isolation) | <b>603.4 Metallic ducts.</b> All metallic ducts shall be constructed as specified in the SMACNA <i>HVAC Duct Construction Standards—Metal and Flexible</i> .<br><b>Exception:</b> Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.4.<br><b>603.5 Nonmetallic ducts.</b> Nonmetallic ducts shall be constructed with Class 0 or Class 1 duct material in accordance with UL 181. Fibrous duct construction shall conform to the SMACNA <i>Fibrous Glass Duct Construction Standards</i> or NAIMA <i>Fibrous Glass Duct Construction Standards</i> . The maximum air temperature within nonmetallic ducts shall not exceed 250_F (121_C).<br><b>603.5.1 Gypsum ducts.</b> The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125_F (52_C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Air ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.<br><b>603.9 Joints, seams and connections.</b> All longitudinal and transverse joints, seams and connections in metallic and nonmetallic ducts shall be constructed as specified in SMACNA <i>HVAC Duct Construction Standards—Metal and Flexible</i> and SMACNA <i>Fibrous Glass Duct Construction Standards</i> or NAIMA <i>Fibrous Glass Duct Construction Standards</i> . All longitudinal and transverse joints, seams and connections shall be sealed in accordance with the <i>International Energy Conservation Code</i> . | <b>602.1 General.</b> Supply air, return air, and outside air for heating, cooling, or evaporative cooling systems shall be conducted through duct systems constructed of metal as set forth in Tables 6-1, 6-2, 6-3, 6-4, 6-7, 6-8, 6-9, and 6-10, or metal ducts complying with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Rectangular ducts in excess of 2 inches w.g. shall comply with UMC Standard No. 6-2 or the referenced HVAC duct construction standard in Chapter 17, Part II. Ducts, plenums, and fittings may be constructed of asbestos cement, concrete, clay, or ceramics when installed in the ground or in a concrete slab, provided the joints are tightly sealed.<br>...<br>When gypsum products are exposed in ducts or plenums, the air temperature shall be restricted to a range from 50°F (10°C) to 125°F (52°C), and moisture content shall be controlled so that the material is not adversely affected. For the purpose of this section, gypsum products shall not be exposed in ducts serving as supply from evaporative coolers, and in other air-handling systems regulated by this chapter when the temperature of the gypsum product will be below the dew point temperature.<br><b>602.4 Joints and Seams of Ducts.</b> Joints of duct systems shall be made substantially airtight by means of tapes, mastics, gasketing, or other means.<br>Crimp joints for round ducts shall have a contact lap of at least 1- |

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| <p>complying with the <i>International Mechanical Code</i>, that are constructed of approved fire-resistance-rated materials.</p> | <p><b>603.10 Supports.</b> Ducts shall be supported with approved hangers at intervals not exceeding 10 feet (3048 mm) or by other approved duct support systems designed in accordance with the <i>International Building Code</i>. Flexible and other factory-made ducts shall be supported in accordance with the manufacturer's installation instructions.</p> <p><b>301.10 Vibration isolation.</b> Where vibration isolation of equipment and appliances is employed, an approved means of supplemental restraint shall be used to accomplish the support and restraint.</p> | <p>1/2 inch (38 mm) and shall be mechanically fastened by means of at least three sheet-metal screws equally spaced around the joint, or an equivalent fastening method.</p> <p>Joints and seams for 0.016 inch (0.41 mm) (No. 28 gauge) and 0.013 inch (0.33 mm) (No. 30 gage) residential rectangular ducts shall be as specified in Table 6-1 for 0.019 inch (0.48 mm) (No. 26 gage) material.</p> <p>Joints and seams for rectangular duct systems shall be as specified in Table 6-1.</p> <p>Joints and seams for flat oval ducts and round ducts in other than single-dwelling units shall be as specified in Table 6-8.</p> <p><b>604.1 Metal Ducts.</b> Ducts shall be securely fastened in place at each change of direction and as set forth in Table 6-7. Vertical rectangular ducts and vertical round ducts shall be supported as set forth in Table 6-7, Part A. Riser ducts shall be held in place by means of metal straps or angles and channels to secure the riser to the structure.</p> <p>Supports for rectangular ducts as set forth in Table 6-7, when suspended from above, shall be installed on two opposite sides of each duct and shall be riveted, bolted, or metal screwed to each side of the duct at not more than the intervals specified.</p> <p>Horizontal round ducts forty (40) inches (1016 mm) or less in diameter when suspended from above shall be supported at intervals not more than as set forth in Table 6-7 with one hanger installed to comply with the requirements listed below:</p> <p><b>604.1.1</b> Ducts shall be equipped with tight-fitting circular bands extending around the entire perimeter of the duct at each specified support interval.</p> <p><b>604.1.2</b> Circular bands shall be not less than one (1) inch (25.4 mm) wide nor less than equivalent to the gage of the duct material it supports.</p> <p><b>Exception:</b> Ducts ten (10) inches (254 mm) and less in diameter may be supported by No. 18 gage galvanized steel wire.</p> <p><b>604.1.3</b> Each circular band shall be provided with a suitable means of connecting to the suspending support.</p> <p><b>604.1.4</b> Ducts shall be braced and guyed to prevent lateral or horizontal swing.</p> <p><b>602.7 Vibration Isolators.</b> Vibration isolators installed between mechanical equipment and metal ducts (or casings) shall be made of an approved material and shall not exceed ten (10) inches (254 mm) in length.</p> |



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| <b>ITEM 32</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |  |
| <b>ITEM 33</b><br><b>[Note: §1014.4 addresses refrigeration machinery rooms.]</b><br><b>1014. 5 Refrigerated rooms or spaces.</b> Rooms or spaces having a floor area of 1,000 square feet (93m <sup>2</sup> ) or more, containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doors.<br>Travel distance shall be determined as specified in Section 1015.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access door where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigerated rooms or spaces.<br><b>Exception:</b> Where using refrigerants in quantities limited to the amounts based on the volume set forth in the <i>International Mechanical Code</i> . | <b>1104.4 Volume calculations.</b> Volume calculations shall be in accordance with Sections 1104.4.1 through 1104.4.3.<br><b>1104.4.1 Noncommunicating spaces.</b> Where the refrigerant-containing parts of a system are located in one or more spaces that do not communicate through permanent openings or HVAC ducts, the volume of the smallest, enclosed occupied space shall be used to determine the permissible quantity of refrigerant in the system.<br><b>1104.4.2 Communicating spaces.</b> Where an evaporator or condenser is located in an air duct system, the volume of the smallest, enclosed occupied space served by the duct system shall be used to determine the maximum allowable quantity of refrigerant in the system.<br><b>Exception:</b> If airflow to any enclosed space cannot be reduced below one-quarter of its maximum, the entire space served by the air duct system shall be used to determine the maximum allowable quantity of refrigerant in the system.<br><b>1104.4.3 Plenums.</b> Where the space above a suspended ceiling is continuous and part of the supply or return air plenum system, this space shall be included in calculating the volume of the enclosed space. | <b>1105.2 Volume of Occupied Space.</b> The quantity of refrigerant in a single, independent circuit of a high-probability system shall not exceed the amounts shown in Table 11-1 based on the volume of the normally occupied space. The volume of the smallest, enclosed, normally occupied space shall be used to determine the permissible quantity of refrigerant in a system which is located in, serves, or passes through such space.<br><b>Exceptions:</b><br>(1) If the airflow to any enclosed space served by a portion of an air-duct system cannot be shut off or reduced below one quarter of its maximum, the cubical contents of the entire space served by that portion of the air-duct system shall be used to determine the permissible quantity of refrigerant in the system.<br>(2) Refrigerated process or storage areas meeting the requirements of Section 1105.3.<br><b>1105.3 Refrigerated Process and Storage Areas.</b> Refrigerant quantities in evaporators and piping within rooms or spaces used exclusively for processing or storage of materials under refrigerated conditions shall not be limited, provided that exiting is provided per the Building Code and that:<br><b>1105.3.1</b> The refrigerated room or space is equipped with a refrigerant vapor detection and alarm system complying with Section 1121.0.<br><b>1105.3.2</b> The refrigerated room or space is sealed from all other portions of the building by vapor-tight construction and tight-fitting, gasketed doors.<br><b>Exception:</b> Adjoining refrigerated rooms. |

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| <b>ITEM 33</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |   |
| <b>ITEM 34</b><br><b>1016.4.1 Corridor ceiling.</b> Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:<br>1. The corridor is not required to be of fire-resistance-rated construction;<br>2. The corridor is separated from the plenum by fire-resistance-rated construction;<br>3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the <i>International Mechanical Code</i> . | <b>606.4 Controls operation.</b> Upon activation, the smoke detectors shall shut down the air distribution system. Air distribution systems that are part of a smoke control system shall switch to the smoke control mode upon activation of a detector.<br><b>606.4.1 Supervision.</b> The duct smoke detectors shall be connected to a fire alarm system. The actuation of a duct smoke detector shall activate a visible and audible supervisory signal at a constantly attended location.<br><b>Exceptions:</b><br>1. The supervisory signal at a constantly attended location is not required where the duct smoke detector activates the building's alarm-indicating appliances.<br>2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Duct smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble. | <b>602.0 Material.</b><br><b>602.1 General.</b><br>. . .<br>Corridors shall not be used to convey air to or from rooms if the corridor is required to be of fire-resistive construction per the Building Code.<br>[Note: This wording does not appear compatible with the IBC.]<br>Concealed building spaces or independent construction within buildings may be used as ducts or plenums.<br><b>609.0 Automatic Shutoffs.</b> Air-moving systems supplying air in excess of 2000 cubic feet per minute (944 L/s) to enclosed spaces within buildings shall be equipped with an automatic shutoff. Automatic shutoff shall be accomplished by interrupting the power source of the air-moving equipment upon detection of smoke in the main supply-air duct served by such equipment. Smoke detectors shall be labeled by an approved agency for air duct installation and shall be installed in accordance with the manufacturer's approved instructions. Such devices shall be compatible with the operating velocities, pressures, temperatures and humidities of the system. Where fire-detection or alarm systems are provided for the building, the smoke detectors required by this section shall be supervised by such systems. |

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|   |  | <b>Exceptions:</b><br>(1) When the space supplied by the air-moving equipment is served by a total coverage smokedetection system complying with the Fire Code, interconnection to such system may be used to accomplish the required shutoff.<br>(2) Automatic shutoff is not required when all occupied rooms served by the air-handling equipment have direct exit to the exterior and the travel distance does not exceed 100 feet (30,480 mm).<br>(3) Automatic shutoff is not required for Group R, Division 3 and Group U Occupancies.<br>(4) Automatic shutoff is not required for approved smoke-control systems or where analysis demonstrates shutoff would create a greater hazard such as may be encountered in air-moving equipment supplying specialized portions of Group H Occupancies. Such equipment shall be required to have smoke detection with remote indication and manual shutoff capability at an approved location.<br>(5) Smoke detectors that are factory installed in listed air-moving equipment may be used in lieu of smoke detectors installed in the main supply-air duct served by such equipment. |
| <b>ITEM 34</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |   |

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| <b>ITEM 35</b><br><b>SECTION 1203 VENTILATION</b><br><b>1203.1 General.</b> Buildings shall be provided with natural ventilation in accordance with Section 1202.4, or mechanical ventilation in accordance with the <i>International Mechanical Code</i> .   | <b>Refer</b> to IMC §§403 through 406 and Table 403.3, whose length preclude their reproduction on this chart  | No requirement in the 2003 UMC.<br><b>401.0 General.</b><br>This chapter contains requirements for evaporative cooling systems and makeup-air requirements for direct-gas-fired heaters, industrial air heaters, and miscellaneous heaters. Ventilation (outdoor) air for occupants shall be designed in accordance with ANSI/ASHRAE 62-2001. Ventilation-air supply requirements for specific occupancies are found in the Building Code.   |
| <b>ITEM 35</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |  |
| <b>ITEM 36</b><br><b>1203.2.1 Openings into attic.</b><br>Exterior openings into the attic space of any building intended for human occupancy shall be covered with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material that will prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. The openings therein shall be a minimum of 1/8 inch (3.2 mm) and shall not exceed 1/4 inch (6.4 mm). Where combustion air is obtained from an attic area, it shall be in accordance with Chapter 7 of the <i>International Mechanical Code</i> . | <b>701.4.2 Attic space.</b> Where combustion air is obtained from an attic area, the attic ventilating openings shall not be subject to ice or snow blockage, and the attic shall have not less than 30 inches (762 mm) vertical clear height at its maximum point. Attic ventilation openings shall be sufficient to provide the required volume of combustion air and the attic ventilation required by the <i>International Building Code</i> . The combustion air openings shall be provided with a sleeve of not less than 0.019-inch (0.5 mm) (No. 26 Gage) galvanized steel or other approved material extending from the appliance enclosure to at least 6 inches (152 mm) above the top of the ceiling joists and insulation. | <b>701.4.1 Two Permanent Openings Method.</b> Two permanent openings, one commencing within 12 in. (300 mm) of the top and one commencing within 12 in. (300 mm) of the bottom of the enclosure, shall be provided. The openings shall communicate directly, or by ducts, with the outdoors or spaces that freely communicate with the outdoors, as follows:<br>(1) Where directly communicating with the outdoors or where communicating to the outdoors through vertical ducts, each opening shall have a minimum free area of 1 in.2/4000 Btu/h (550 mm2/kW) of total input rating of all equipment in the enclosure. (See Figures 7-2 and 7-3.)<br>(2) Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of 1 in.2/2000 Btu/h (1100 mm2/kW) of total input rating of all equipment in the enclosure. (See Figure 7-4.)<br><b>701.10 Combustion Air Ducts.</b> Combustion air ducts shall comply with the following:<br>...<br>(5) Ducts terminating in attics shall not be screened. |

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| <b>ITEM 36</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |   |
| <b>ITEM 37</b><br><b>1203.4.2 Contaminants exhausted.</b><br>Contaminant sources in naturally ventilated spaces shall be removed in accordance with the <i>International Mechanical Code</i> and the <i>International Fire Code</i> . | <b>401.7 Contaminant sources.</b> Stationary local sources producing air-borne particulates, heat, odors, fumes, spray, vapors, smoke or gases in such quantities as to be irritating or injurious to health shall be provided with an exhaust system in accordance with Chapter 5 or a means of collection and removal of the contaminants. Such exhaust shall discharge directly to an approved location at the exterior of the building.  | <b>UMC 505.1 General.</b> A mechanical ventilation or exhaust system shall be installed to control, capture, and remove emissions generated from product use or handling when required by the Building Code or Fire Code and when such emissions result in a hazard to life or property. The design of the system shall be such that the emissions are confined to the area in which they are generated by air currents, hoods, or enclosures and shall be exhausted by a duct system to a safe location or treated by removing contaminants. Ducts conveying explosives or flammable vapors, fumes, or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums.<br><b>Exception:</b> Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their lower flammability limit (LFL) may pass through other spaces.<br><b>505.1.1</b> Incompatible materials shall not be conveyed in the same system.<br><b>505.1.2</b> In systems conveying flammable vapors, gases, or mists, the concentration shall not exceed 25 percent of the lower flammability limit (LFL).<br><b>Exception:</b> Higher concentrations shall be permitted if the exhaust system is designed and protected in accordance with the |

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|   |   | <p>Standard on Explosion Prevention Systems in Chapter 17, using one or more of the following techniques:</p> <ul style="list-style-type: none"> <li>(a) Combustible concentration reduction</li> <li>(b) Oxidant concentration reduction</li> <li>(c) Deflagration suppression</li> <li>(d) Deflagration pressure containment</li> </ul> <p>Separate and distinct systems shall be provided for incompatible materials.</p> <p>Contaminated air shall not be recirculated to occupied areas unless contaminants have been removed. Air contaminated with explosive or flammable vapors, fumes, or dusts; flammable or toxic gases; or radioactive material shall not be recirculated.</p> |
| <b>ITEM 37</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <div> <input type="checkbox"/> The requirements are equivalent           </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:           </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.           </div> |  |

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| <b>ITEM 38</b><br><b>1203.4.2.1 Bathrooms.</b> Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated in accordance with the <i>International Mechanical Code</i> . | <p><b>Refer</b> to IMC §403 and Table 403.3, whose length preclude their reproduction on this chart.<br/>         [Note: Table 4-3 refers to both Toilet rooms and bathrooms.]</p>  | <p>No requirement in the 2003 UMC.<br/> <b>2001 CBC §1203.3 Ventilation.</b><br/>         ...<br/>         Bathrooms, water closet compartments, laundry rooms and similar rooms shall be provided with natural ventilation by means of openable exterior openings with an area not less than 1/20 of the floor area of such rooms with a minimum of 1½ square feet 90.14 m<sup>2</sup>).<br/> <b>EXCEPTION:</b> Laundry rooms in Group R, Division 3 Occupancies.<br/>         In lieu of required exterior openings for natural ventilation in bathrooms containing a bathtub, shower or combination thereof; laundry rooms; and similar rooms, a mechanical ventilation system connected directly to the outside capable of providing five air changes per hour shall be provided. Such systems shall be connected directly to the outside, and the point of discharge shall be at least 3 feet (914 mm) from any opening that allows air entry into occupied portions of the building. Bathrooms that contain only a water closet, lavatory or combination thereof and similar rooms may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.</p> |
| <b>ITEM 38</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div> |   |





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| with the <b>International Mechanical Code</b> . | in rooms, appliances in attics, appliances under floors, and equipment and appliances on roofs or elevated structures.] | <p><b>Exception:</b> Unit heaters and room heaters may be installed with an eighteen (18) inch (457 mm) minimum depth working space. A platform shall not be required for unit heaters or room heaters. The operating instructions shall be attached to the appliance where they can be read easily.</p> <p><b>305.1 Accessibility for Service.</b> All gas utilization equipment shall be located with respect to building construction and other equipment so as to permit access to the gas utilization equipment. Sufficient clearance shall be maintained to permit cleaning of heating surfaces; the replacement of filters, blowers, motors, burners, controls, and vent connections; the lubrication of moving parts where necessary; the adjustment and cleaning of burners and pilots; and the proper functioning of explosion vents, if provided. For attic installation, the passageway and servicing area adjacent to the equipment shall be floored.</p> <p><b>904.10.3.1</b> Gas utilization equipment located on roofs or other elevated locations shall be accessible.</p> <p><b>904.10.3.2</b> Buildings of more than 15 ft. (4.6 m) in height shall have an inside means of access to the roof, unless other means acceptable to the Authority Having Jurisdiction are used.</p> <p><b>904.10.3.3</b> The inside means of access shall be a permanent or foldaway inside stairway or ladder, terminating in an enclosure, scuttle, or trapdoor. Such scuttles or trapdoors shall be at least 22 in. x 24 in. (560 mm x 610 mm) in size, shall open easily and safely under all conditions, especially snow, and shall be constructed so as to permit access from the roof side unless deliberately locked on the inside. At least 6 ft. (1.8 m) of clearance shall be available between the access opening and the edge of the roof or similar hazard, or rigidly fixed rails or guards a minimum of 42 in. (1.1 m) in height shall be provided on the exposed side. Where parapets or other building structures are utilized in lieu of guards or rails, they shall be a minimum of 42 in. (1.1 m) in height.</p> <p><b>904.10.3.4</b> Permanent lighting shall be provided at the roof access. The switch for such lighting shall be located inside the building near the access means leading to the roof.</p> <p><b>912.8 Access.</b> The space in which any floor furnace is installed shall be accessible by an opening in the foundation not less than 24 in. x 18 in. (610 mm x 460 mm) or by a trapdoor not less than 24 in. x 24 in. (610 mm x 610 mm) in any cross-section thereof, and a passageway not less than 24 in. x 18 in. (610 mm x 460 mm) in any cross-section thereof. [NFPA 54:9.11.8]</p> |

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| <b>ITEM 40</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |  |
| <b>ITEM 41</b><br><b>2304.5 Framing around flues and chimneys.</b> Combustible framing shall be a minimum of 2 inches (51 mm), but shall not be less than the distance specified in Sections 2111 and 2113 and the <i>International Mechanical Code</i> , from flues, chimneys and fireplaces, and 6 inches (152 mm) away from flue openings. | <b>801.18.4 Clearances.</b> [Existing] Chimneys and vents shall have air-space clearance to combustibles in accordance with the <i>International Building Code</i> and the chimney or vent manufacturer's installation instructions.<br><b>Exception:</b> Masonry chimneys equipped with a chimney lining system tested and listed for installation in chimneys in contact with combustibles in accordance with UL 1777, and installed in accordance with the manufacturer's instructions, shall not be required to have clearance between combustible materials and exterior surfaces of the masonry chimney. Noncombustible fireblocking shall be provided in accordance with the <i>International Building Code</i> .<br><b>802.8 Insulation shield.</b> Where [Type B-, L- and pellet] vents pass through insulated assemblies, an insulation shield constructed of not less than No. 26 Gage sheet metal shall be installed to provide clearance between the vent and the insulation material. The clearance shall be not less than the clearance to combustibles specified by the vent manufacturer's installation instructions. Where vents pass through attic space, the shield shall terminate not less than 2 inches (51mm) above the insulation materials and shall be secured in place to prevent displacement. Insulation shields provided as part of a listed vent system shall be installed in accordance with the manufacturer's installation instructions.<br><b>Refer</b> to IMC §803.10.4, Table 803.10.4, §803.10.6, and Table 803.10.6, whose length preclude their reproduction on this chart. | Table 3-3 and Table 8-2<br><b>802.7.4.4</b> Minimum clearances from single-wall metal pipe to combustible material shall be in accordance with Table 8-2.<br><b>802.10.5 Clearance.</b> Minimum clearances from vent connectors to combustible material shall be in accordance with Table 8-2.<br><b>Exception:</b> The clearance between a vent connector and combustible material shall be permitted to be reduced where the combustible material is protected as specified for vent connectors in Table 5-3.<br><b>802.12.7 Clearance.</b> A draft hood shall be located so that its relief opening is not less than 6 in. (150 mm) from any surface except that of the equipment it serves and the venting system to which the draft hood is connected. Where a greater or lesser clearance is indicated on the equipment label, the clearance shall not be less than that specified on the label. Such clearances shall not be reduced. [NFPA 54:10.12] |

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| IBC Code Section  | IMC Code Sections  | UMC Code Sections   |
| <b>ITEM 41</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |   |
| <b>ITEM 42</b><br><b>CHAPTER 28</b><br><b>MECHANICAL SYSTEMS</b><br><b>SECTION 2801 GENERAL</b><br><b>2801.1 Scope.</b> Mechanical appliances, equipment and systems shall be constructed, installed and maintained in accordance with the <i>International Mechanical Code</i> and the <i>International Fuel Gas Code</i> . Masonry chimneys, fireplaces and barbecues shall comply with the <i>International Mechanical Code</i> and Chapter 21 of this code. | <p><b>Refer</b> to IMC Chapter 9 for those §§ concerning mechanical appliances, whose length preclude their reproduction on this chart</p> <p><b>Refer</b> to IMC §§801 and 803 concerning masonry chimneys, fireplaces, and barbecues, whose length preclude their reproduction on this chart</p>   | <p>Refer to Chapters 3 and 9, 2003 UMC.</p> <p><b>802.5.1 Listing or Construction.</b><br/> <b>802.5.1.1</b> Factory-built chimneys shall be installed in accordance with their listing and the manufacturers' instructions. Factory-built chimneys used to vent appliances that operate at positive vent pressure shall be listed for such application.<br/> <b>802.5.1.2</b> Metal chimneys shall be built and installed in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel-Burning Appliances.<br/> <b>802.5.1.3</b> Masonry Chimney shall be built and installed in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel-Burning Appliances, and lined with approved clay flue lining, a listed chimney lining system, or other approved material that will resist corrosion, erosion, softening, or cracking from vent gases at temperatures up to 1800°F (982°C).<br/> <b>Exception:</b> Masonry chimney flues lined with a chimney lining system specifically listed for use with listed gas appliances with draft hoods, Category I appliances, and other gas appliances listed for use with Type B vents shall be permitted. The liner shall be installed in accordance with the liner manufacturer's</p> |

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| IBC Code Section  | IMC Code Sections  | UMC Code Sections  |
|   |  | instructions and the terms of the listing. A permanent identifying label shall be attached at the point where the connection is to be made to the liner. The label shall read: "This chimney liner is for appliances that burn gas only. Do not connect to solid or liquid-fuel-burning appliances or incinerators." |
| <b>ITEM 42</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate.   |  |
| <b>ITEM 43</b><br><b>3004.3.1 Reduced vent area.</b><br>Where mechanical ventilation conforming to the <i>International Mechanical Code</i> is provided, a reduction in the required vent area is allowed provided that all of the following conditions are met:<br>1. The occupancy is not in Group R-1, R-2, I-1 or I-2 or of a similar occupancy with overnight sleeping quarters.<br>2. The vents required by Section 3004.2 do not have outside exposure.<br>3. The hoistway does not extend to the top of the building. | <b>501.3 Pressure equalization.</b> Mechanical exhaust systems shall be sized to remove the quantity of air required by this chapter to be exhausted. The system shall operate when air is required to be exhausted. Where mechanical exhaust is required in a room or space in other than occupancies in Group R-3, such space shall be maintained with a neutral or negative pressure. If a greater quantity of air is supplied by a mechanical ventilating supply system than is removed by a mechanical exhaust system for a room, adequate means shall be provided for the natural exit of the excess air supplied. If only a mechanical exhaust system is installed for a room or if a greater quantity of air is removed by a mechanical exhaust system than is supplied by a mechanical ventilating supply system for a room, adequate means shall be provided for the natural supply of the deficiency in the air supplied.<br><b>501.4 Ducts.</b> Where exhaust duct construction is not specified in this chapter, such construction shall comply with Chapter 6. | For §505.1, see Item 37 above;<br>for §505.2, see Item 27 above; and<br>for §506.0, see Item 17 above.   |



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| <b>ITEM 44</b><br><b>3401.3 Compliance with other codes.</b> Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in the <i>International Fire Code</i> , <i>International Fuel Gas Code</i> , <i>International Plumbing Code</i> , <i>International Property Maintenance Code</i> , <i>International Private Sewage Disposal Code</i> , <i>International Mechanical Code</i> , <i>International Residential Code</i> and <i>ICC Electrical Code</i> . | <p><b>[EB] 102.4 Additions, alterations or repairs.</b> Additions, alterations, renovations or repairs to a mechanical system shall conform to that required for a new mechanical system without requiring the existing mechanical system to comply with all of the requirements of this code. Additions, alterations or repairs shall not cause an existing mechanical system to become unsafe, hazardous or overloaded.</p> <p>Minor additions, alterations, renovations and repairs to existing mechanical systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is approved.</p> <p><b>[EB] 102.5 Change in occupancy.</b> It shall be unlawful to make a change in the occupancy of any structure which will subject the structure to any special provision of this code applicable to the new occupancy without approval. The code official shall certify that such structure meets the intent of the provisions of law governing building construction for the proposed new occupancy and that such change of occupancy does not result in any hazard to the public health, safety or welfare.</p> | <p><b>104.1 Additions, Alterations, or Repairs.</b> Additions, alterations, or repairs may be made to any mechanical system without requiring the existing mechanical system to comply with all the requirements of this code, provided the addition, alteration, or repair conforms to that required for a new mechanical system. Additions, alterations, or repairs shall not cause an existing system to become unsafe or create unhealthy or overloaded conditions. Minor additions, alterations, and repairs to existing mechanical systems may be installed in accordance with the law in effect at the time the original installation was made, when approved by the Authority Having Jurisdiction.</p> <p><b>104.2 Existing Installations.</b> Mechanical systems lawfully in existence at the time of the adoption of this code may have their use, maintenance, or repair continued if the use, maintenance, or repair is in accordance with the original design and location and no hazard to life, health, or property has been created by such mechanical systems.</p> <p><b>104.3 Changes in Building Occupancy.</b> Mechanical systems that are a part of any building or structure undergoing a change in use or occupancy, as defined in the Building Code, shall comply with all requirements of this code that may be applicable to the new use or occupancy.</p> |
| <b>ITEM 44</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div>   |  |



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| IBC Code Section   | IMC Code Sections   | UMC Code Sections   |
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| <p><b>ITEM 46</b><br/> <b>3410.6.8 Automatic fire detection.</b> Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with Section 907 and the <i>International Mechanical Code</i>. Under the categories and occupancies in Table 3410.6.8, determine the appropriate value and enter that value into Table 3410.7 under Safety Parameter 3410.6.8, Automatic Fire Detection, for fire safety, means of egress and general safety.</p> | <p><b>606.1 Controls required.</b> Air distribution systems shall be equipped with smoke detectors listed and labeled for installation in air distribution systems, as required by this section.</p> <p><b>606.2 Where required.</b> Smoke detectors shall be installed where indicated in Sections 606.2.1 through 606.2.3.</p> <p><b>Exception:</b> Smoke detectors shall not be required where air distribution systems are incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or space in which the smoke is generated.</p> <p><b>606.2.1 Return air systems.</b> Smoke detectors shall be installed in return air systems with a design capacity greater than 2,000 cfm (0.9 m3/s), in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances.</p> <p><b>Exception:</b> Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the <i>International Fire Code</i>. The area smoke detection system shall comply with Section 606.4.</p> <p><b>606.2.2 Common supply and return air systems.</b> Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cfm (0.9 m3/s), the return air system shall be provided with smoke detectors in accordance with Section 606.2.1.</p> <p><b>Exception:</b> Individual smoke detectors shall not be required for each fan-powered terminal unit, provided that such units do not have an individual design capacity greater than 2,000 cfm (0.9 m3/s) and will be shut down by activation of one of the following:</p> <ol style="list-style-type: none"> <li>1. Smoke detectors required by Sections 606.2.1 and 606.2.3.</li> <li>2. An approved area smoke detector system located in the return air plenum serving such units.</li> <li>3. An area smoke detector system as prescribed in the exception to Section 606.2.1.</li> </ol> <p>In all cases, the smoke detectors shall comply with Sections 606.4 and 606.4.1.</p> <p><b>606.2.3 Return air risers.</b> Where return air risers serve two or more stories and serve any portion of a return air system having a design capacity greater than 15,000 cfm (7.1 m3/s), smoke detectors shall be installed at each story. Such smoke detectors shall be located upstream of the connection between the return air riser and any air ducts or plenums.</p> | <p><b>609.0 Automatic Shutoffs.</b> Air-moving systems supplying air in excess of 2000 cubic feet per minute (944 L/s) to enclosed spaces within buildings shall be equipped with an automatic shutoff. Automatic shutoff shall be accomplished by interrupting the power source of the air-moving equipment upon detection of smoke in the main supply-air duct served by such equipment. Smoke detectors shall be labeled by an approved agency for air duct installation and shall be installed in accordance with the manufacturer's approved instructions. Such devices shall be compatible with the operating velocities, pressures, temperatures and humidities of the system. Where fire-detection or alarm systems are provided for the building, the smoke detectors required by this section shall be supervised by such systems.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>(1) When the space supplied by the air-moving equipment is served by a total coverage smoke-detection system complying with the Fire Code, interconnection to such system may be used to accomplish the required shutoff.</li> <li>(2) Automatic shutoff is not required when all occupied rooms served by the air-handling equipment have direct exit to the exterior and the travel distance does not exceed 100 feet (30,480 mm).</li> <li>(3) Automatic shutoff is not required for Group R, Division 3 and Group U Occupancies.</li> <li>(4) Automatic shutoff is not required for approved smoke-control systems or where analysis demonstrates shutoff would create a greater hazard such as may be encountered in air-moving equipment supplying specialized portions of Group H Occupancies. Such equipment shall be required to have smoke detection with remote indication and manual shutoff capability at an approved location.</li> <li>(5) Smoke detectors that are factory installed in listed air-moving equipment may be used in lieu of smoke detectors installed in the main supply-air duct served by such equipment.</li> </ol> |



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| IBC Code Section   | IMC Code Sections   | UMC Code Sections |
|  | <p><b>606.3 Installation.</b> Smoke detectors required by this section shall be installed in accordance with NFPA 72. The required smoke detectors shall be installed to monitor the entire airflow conveyed by the system including return air and exhaust or relief air. Access shall be provided to smoke detectors for inspection and maintenance.</p> <p><b>606.4 Controls operation.</b> Upon activation, the smoke detectors shall shut down the air distribution system. Air distribution systems that are part of a smoke control system shall switch to the smoke control mode upon activation of a detector.</p> <p><b>606.4.1 Supervision.</b> The duct smoke detectors shall be connected to a fire alarm system. The actuation of a duct smoke detector shall activate a visible and audible supervisory signal at a constantly attended location.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. The supervisory signal at a constantly attended location is not required where the duct smoke detector activates the building's alarm-indicating appliances.</li> <li>2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Duct smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.</li> </ol> |                   |
| <p><b>ITEM 46</b><br/> <b>Committee Comments</b><br/>           (Use additional pages as needed)</p> | <p><input type="checkbox"/> The requirements are equivalent</p> <p><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The referenced sections are not readily determinate.</p>   |                   |

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| IBC Code Section  | IMC Code Sections  | UMC Code Sections |
| <b>ITEM 47</b><br><b>3410.6.8.1 Categories.</b> The categories for automatic fire detection are:<br>1. Category a — None.<br>2. Category b—Existing smoke detectors in HVAC systems and maintained in accordance with the <i>International Fire Code</i> .<br>3. Category c—Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the <i>International Mechanical Code</i> .<br>4. Category d — Smoke detectors throughout all floor areas other than individual guestrooms, tenant spaces and dwelling units.<br>5. Category e—Smoke detectors installed throughout the fire area. | See Item 46 above.   | See Item 46 above |
| <b>ITEM 47</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                   |

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| IBC Code Section   | IPC Code Sections  | UPC Code Sections               |
| <b>ITEM 48</b><br><b>415.7.4 Dry cleaning plants.</b> The construction and installation of dry cleaning plants shall be in accordance with the requirements of this code, the <i>International Mechanical Code</i> , the <i>International Plumbing Code</i> and NFPA 32. Dry cleaning solvents and systems shall be classified in accordance with the <i>International Fire Code</i> . | No specific section in IPC found.  | No requirements in the 2003 UPC |
| <b>ITEM 48</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |                                 |

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| IBC Code Section   | IPC Code Sections  | UPC Code Sections   |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
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| <b>ITEM 49</b><br><b>603.1.2 Piping.</b> The use of combustible piping materials shall be permitted when installed in accordance with the limitations of the <i>International Mechanical Code</i> and the <i>International Plumbing Code</i> . | <p><b>303.2 Installation of materials.</b> All materials used shall be installed in strict accordance with the standards under which the materials are accepted and approved. In the absence of such installation procedures, the manufacturer's installation instructions shall be followed. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to minimum provisions of this code, the provisions of this code shall apply.</p> <p><b>303.3 Plastic pipe, fittings and components.</b> All plastic pipe, fittings and components shall be third-party certified as conforming to NSF 14.</p> <p><b>303.4 Third-party testing and certification.</b> All plumbing products and materials shall comply with the referenced standards, specifications and performance criteria of this code and shall be identified in accordance with Section 303.1. When required by Table 303.4, plumbing products and materials shall either be tested by an approved third-party testing agency or certified by an approved third-party certification agency.</p> <p align="center"><b>TABLE 303.4<br/>PRODUCTS AND MATERIALS REQUIRING THIRD-PARTY TESTING AND THIRD-PARTY CERTIFICATION</b></p> <table border="1"> <thead> <tr> <th>PRODUCT OR MATERIAL</th><th>THIRD-PARTY CERTIFIED</th><th>THIRD-PARTY TESTED</th></tr> </thead> <tbody> <tr> <td>Portable water supply system components and potable water fixture fittings</td><td align="center">Required</td><td align="center">—</td></tr> <tr> <td>Sanitary drainage and vent system components</td><td>Plastic pipe, fittings and pipe-related components</td><td align="center">All others</td></tr> <tr> <td>Waste fixture fittings</td><td>Plastic pipe, fittings and pipe-related components</td><td align="center">All others</td></tr> <tr> <td>Storm drainage system components</td><td>Plastic pipe, fittings and pipe-related components</td><td align="center">All others</td></tr> <tr> <td>Plumbing fixtures</td><td align="center">—</td><td align="center">Required</td></tr> <tr> <td>Plumbing appliances</td><td align="center">Required</td><td align="center">—</td></tr> </tbody> </table> | PRODUCT OR MATERIAL | THIRD-PARTY CERTIFIED | THIRD-PARTY TESTED | Portable water supply system components and potable water fixture fittings | Required | — | Sanitary drainage and vent system components | Plastic pipe, fittings and pipe-related components | All others | Waste fixture fittings | Plastic pipe, fittings and pipe-related components | All others | Storm drainage system components | Plastic pipe, fittings and pipe-related components | All others | Plumbing fixtures | — | Required | Plumbing appliances | Required | — | <p><b>301.0 Materials – Standards and Alternates.</b></p> <p><b>301.1 Minimum Standards.</b></p> <p><b>301.1.1 Approvals.</b> All pipe, pipe fittings, traps, fixtures, material, and devices used in a plumbing system shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and shall conform to approved applicable recognized standards referenced in this code, and shall be free from defects. Unless otherwise provided for in this code, all materials, fixtures, or devices used or entering into the construction of plumbing systems, or parts thereof, shall be submitted to the Authority Having Jurisdiction for approval.</p> <p><b>301.1.2 Marking.</b> Each length of pipe and each pipe fitting, trap, fixture, material, and device used in a plumbing system shall have cast, stamped, or indelibly marked on it the manufacturer's mark or name which shall readily identify the manufacturer to the end user of the product when such marking is required by the approved standard that applies. When required by the approved standard that applies the product shall be marked with the weight and the quality of the product. All materials and devices used or entering into the construction of plumbing and drainage systems, or parts thereof, shall be marked and identified in a manner satisfactory to the Authority Having Jurisdiction. All such marking shall be done by the manufacturer. Field marking shall not be acceptable.</p> <p><b>301.1.3 Standards.</b> Standards listed or referred to in this chapter or other chapters cover materials which will conform to the requirements of this code, when used in accordance with the limitations imposed in this or other chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or configurations, there may be only a portion of the listed standard which is applicable. Design and materials for special conditions or materials not provided for herein may be used only by special permission of the Authority Having Jurisdiction after the Authority Having Jurisdiction has been satisfied as to their adequacy. A list of accepted plumbing materials standards is included in Table 14-1. All IAPMO Installation Standards are included in Appendix I for the convenience of the users of this code. They are not considered as a part of this code unless formally adopted as such by the Authority Having Jurisdiction.</p> |
| PRODUCT OR MATERIAL  | THIRD-PARTY CERTIFIED  | THIRD-PARTY TESTED  |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Portable water supply system components and potable water fixture fittings   | Required   | —                   |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Sanitary drainage and vent system components   | Plastic pipe, fittings and pipe-related components   | All others          |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Waste fixture fittings   | Plastic pipe, fittings and pipe-related components   | All others          |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Storm drainage system components   | Plastic pipe, fittings and pipe-related components   | All others          |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Plumbing fixtures  | —  | Required            |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |
| Plumbing appliances  | Required   | —                   |                       |                    |  |          |   |  |  |            |                        |  |            |                                  |  |            |                   |   |          |                     |          |   |  |

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| IBC Code Section  | IPC Code Sections  |          |          | UPC Code Sections |
|   | Backflow prevention devices  | Required | —        |                   |
|   | Water distribution system safety devices   | Required | —        |                   |
|   | Special waste system components  | —        | Required |                   |
|   | Subsoil drainage system components   | —        | Required |                   |
| <b>ITEM 49</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |          |          |                   |

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| IBC Code Section   | IPC Code Sections  | UPC Code Sections  |
| <b>ITEM 50</b><br><b>717.5 Combustibles in concealed spaces in Type I or II construction.</b><br>Combustibles shall not be permitted in concealed spaces of buildings of Type I or II construction.<br><b>Exceptions:</b><br>1. Combustible materials in accordance with Section 603.<br>2. Combustible materials complying with Section 602 of the <i>International Mechanical Code</i> .<br>3. Class A interior finish materials.<br>4. Combustible piping within partitions or enclosed shafts installed in accordance with the provisions of this code. Combustible piping shall be permitted within concealed ceiling spaces where installed in accordance with the <i>International Mechanical Code</i> and the <i>International Plumbing Code</i> . | <b>307.6 Piping materials exposed within plenums.</b> All piping materials exposed within plenums shall comply with the provisions of the <i>International Mechanical Code</i> .<br>[See <b>ITEM X</b> ]   | <b>701.1.2</b> ABS and PVC DWV piping installations shall be installed in accordance with IS 5, IS 9, and Chapter 15 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 50, when tested in accordance with the Test for Surface - Burning Characteristics of the Building Materials. (See the Building Code standards based on ASTM E-84 and ANSI/UL 723.)<br><b>1101.3 Material Uses.</b> Rainwater piping placed within the interior of a building or run within a vent or shaft shall be of cast iron, galvanized steel, wrought iron, brass, copper, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, or other approved materials, and changes in direction shall conform to the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with IS 5, IS 9, and Chapter 15 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 50, when tested in accordance with the Test for Surface-Burning Characteristics of the Building Materials (See the Building Code standards based on ASTM E-84 and ANSI/UL 723.).<br>[No requirements for water piping found] |
| <b>ITEM 50</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |  |

**2003 IPC – 2003 UPC REFERENCE COMPARISON**

| IBC Code Section  | IPC Code Sections   | UPC Code Sections  |
|---|---|--|
| <p><b>ITEM 51</b><br/> <b>[F] 903.3.5 Water supplies.</b> Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the <i>International Plumbing Code</i>.</p> | <p><b>608.16.4 Connections to automatic fire sprinkler systems and standpipe systems.</b> The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow by a double check-valve assembly or a reduced pressure principle backflow preventer.<br/> <b>Exceptions:</b><br/> 1. Where systems are installed as a portion of the water distribution system in accordance with the requirements of this code and are not provided with a fire department connection, isolation of the water supply system shall not be required.<br/> 2. Isolation of the water distribution system is not required for deluge, preaction or dry pipe systems.<br/> <b>608.16.4.1 Additives or nonpotable source.</b> Where systems under continuous pressure contain chemical additives or antifreeze, or where systems are connected to a nonpotable secondary water supply, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer. Where chemical additives or antifreeze are added to only a portion of an automatic fire sprinkler or standpipe system, the reduced pressure principle backflow preventer shall be permitted to be located so as to isolate that portion of the system. Where systems are not under continuous pressure, the potable water supply shall be protected against backflow by an air gap or a pipe applied atmospheric vacuum breaker conforming to ASSE 1001 or CAN/CSA B64.1.1.</p> | <p><b>603.4.18 Protection from Fire Systems.</b><br/> <b>603.4.18.1</b> Except as provided under Sections 603.4.18.2 and 603.4.18.3, potable water supplies to fire protection systems that are normally under pressure, including but not limited to standpipes and automatic sprinkler systems, except in one- or two family residential sprinkler systems, piped in materials approved for potable water distribution systems shall be protected from back-pressure and back-siphonage by one of the following testable devices:<br/> (1) Double check valve assembly<br/> (2) Double check detector assembly<br/> (3) Reduced pressure backflow preventer<br/> (4) Reduced pressure detector assembly<br/> Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall meet the requirements of the appropriate standards referenced in Table 14-1.<br/> <b>603.4.18.2</b> Where fire protection systems supplied from a potable water system include a fire department (siamese) connection which is located less than seventeen hundred (1700) feet (518.2 m) from a non-potable water source that could be used by the fire department as a secondary water supply, the potable water supply shall be protected by one of the following:<br/> (1) Reduced pressure backflow preventer<br/> (2) Reduced pressure detector assembly<br/> <b>Note:</b><br/> Non-potable water sources include fire department vehicles carrying water of questionable quality or water that is treated with antifreeze, corrosion inhibitors, or extinguishing agents.<br/> <b>603.4.18.3</b> Where antifreeze, corrosion inhibitors, or other chemicals are added to a fire protection system supplied from a potable water supply, the potable water system shall be protected by one of the following:<br/> (1) Reduced pressure backflow preventer<br/> (2) Reduced pressure detector assembly</p> |

| 2003 IPC – 2003 UPC REFERENCE COMPARISON  |  |   |
|---|--|---|
| IBC Code Section  | IPC Code Sections  | UPC Code Sections   |
| <b>ITEM 51</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <input type="checkbox"/> The requirements are equivalent<br><br><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:<br><br><br><br><br><br><br><br><br><br><input type="checkbox"/> The referenced sections are not readily determinate. |   |
| <b>ITEM 52</b><br><b>1109.2 Toilet and bathing facilities.</b> Toilet rooms and bathing facilities shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing facilities provided within the facility shall not be located on the inaccessible floor. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing facility shall be accessible.<br><b>Exceptions:</b><br>4. Toilet room fixtures that are in excess of those required by the <i>International Plumbing Code</i> and that are designated for use by children in day care and primary school occupancies. | <b>Not Applicable:</b> California rewrites Chapter 11 and may or may not include a similar provision.  | <b>Not Applicable:</b> California rewrites Chapter 11 and may or may not include a similar provision. |





| 2003 IPC – 2003 UPC REFERENCE COMPARISON  |  |   |
|---|--|---|
| IBC Code Section  | IPC Code Sections  | UPC Code Sections   |
| <p><b>ITEM 54</b><br/> <b>[P] 1503.4 Roof drainage.</b> Design and installation of roof drainage systems shall comply with the <i>International Plumbing Code</i>.</p> <p><b>[Note: 2001 CBC §1506.1 General.</b> Roofs shall be sloped a minimum of 1 unit vertical in 48 units horizontal (2% slope) for drainage unless designed for water accumulation in accordance with Section 1611 and approved by the building official. <b>2003 IBC §1611</b> addresses Rain Loads, but is not referenced by Chapter 15.]</p> | <p><b>1101.7 Roof design.</b> Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked.</p> <p><b>1110.1 General.</b> The roof of a structure shall be designed for the storage of water where the storm drainage system is engineered for controlled flow. The controlled flow roof drain system shall be an engineered system in accordance with this section and the design, submittal, approval, inspection and testing requirements of Section 105.4. The controlled flow system shall be designed based on the required rainfall rate in accordance with Section 1106.1.</p> | <p><b>1101.11.1 Primary Roof Drainage.</b> Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Authority Having Jurisdiction, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm of sixty (60) minutes duration and 100-year return period.</p> <p><b>1101.11.3 Equivalent Systems.</b> When approved by the Authority Having Jurisdiction, the requirements of Sections 1101.11.1 and 1101.11.2 shall not preclude the installation of an engineered roof drainage system that has sufficient capacity to prevent water from ponding on the roof in excess of that allowed in the roof structural design with a rainfall rate of at least twice that for a 100-year, 60-minute storm and with a blockage in any single point in the storm drainage system.</p> <p><b>1108.0 Controlled-Flow Roof Drainage.</b><br/> <b>1108.1 Application.</b><br/> (7) Roof design, where controlled-flow roof drainage is used, shall be such that the minimum design roof live load is thirty (30) pounds per square foot (146.5 kg/m<sup>2</sup>) to provide a safety factor above the fifteen (15) pounds per square foot (73.2 kg/m<sup>2</sup>) represented by the depth of water stored on the roof as indicated in Table 11-4.</p> |
| <p><b>ITEM 54</b><br/> <b>Committee Comments</b><br/> (Use additional pages as needed)</p>  | <div> <input type="checkbox"/> The requirements are equivalent </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code: </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate. </div>  |   |

## 2003 IPC – 2003 UPC REFERENCE COMPARISON

| IBC Code Section  | IPC Code Sections   | UPC Code Sections |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
|---|---|-------------------|----------|----------------------|------------|----------------|----------------------------------|--------------------------------|------------|--|--|---------------------|----------------------|---|---------------|---|
| <div>ITEM 55</div> <div>1807.4.3 Drainage discharge. The floor base and foundation perimeter drain shall discharge by gravity or mechanical means into an approved drainage system that complies with the <i>International Plumbing Code</i>.</div> <div>Exception: Where a site is located in well-drained gravel or sand/gravel mixture soils, a dedicated drainage system is not required.</div> | <div>1102.5 Subsoil drain pipe. Subsoil drains shall be horizontally split or perforated pipe conforming to one of the standards listed in Table 1102.5.</div> <div>TABLE 1102.5<br/>SUBSOIL DRAIN PIPE</div> <table><tr><th>MATERIAL</th><th>STANDARD</th></tr><tr><td>Asbestos-cement pipe</td><td>ASTM C 508</td></tr><tr><td>Cast-iron pipe</td><td>ASTM A 74; ASTM A 888; CISPI 301</td></tr><tr><td>Polyethylene (PE) plastic pipe</td><td>ASTM F 405</td></tr><tr><td>Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, PS25, PS50 or PS100)</td><td>ASTM D 2729; ASTM F 891; CSA-B 182.2; CAN/CSA-B182.4</td></tr><tr><td>Vitrified clay pipe</td><td>ASTM C 4; ASTM C 700</td></tr><tr><td>Stainless steel drainage Systems, Type 316L</td><td>ASME A112.3.1</td></tr></table> | MATERIAL          | STANDARD | Asbestos-cement pipe | ASTM C 508 | Cast-iron pipe | ASTM A 74; ASTM A 888; CISPI 301 | Polyethylene (PE) plastic pipe | ASTM F 405 | Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, PS25, PS50 or PS100) | ASTM D 2729; ASTM F 891; CSA-B 182.2; CAN/CSA-B182.4 | Vitrified clay pipe | ASTM C 4; ASTM C 700 | Stainless steel drainage Systems, Type 316L | ASME A112.3.1 | <div>1102.5 Subsoil Drains.</div> <div>1102.5.1 Subsoil drains shall be constructed of materials specified in Table 14-1.</div> <div>1102.5.2 Subsoil drains shall be open-jointed or of perforated pipe, vitrified clay, plastic, cast iron, or porous concrete.</div> |
| MATERIAL  | STANDARD  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Asbestos-cement pipe  | ASTM C 508  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Cast-iron pipe  | ASTM A 74; ASTM A 888; CISPI 301  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Polyethylene (PE) plastic pipe  | ASTM F 405  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, PS25, PS50 or PS100)  | ASTM D 2729; ASTM F 891; CSA-B 182.2; CAN/CSA-B182.4  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Vitrified clay pipe   | ASTM C 4; ASTM C 700  |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| Stainless steel drainage Systems, Type 316L   | ASME A112.3.1   |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |
| <div>ITEM 55</div> <div>Committee Comments</div> <div>(Use additional pages as needed)</div>  | <div><input type="checkbox"/> The requirements are equivalent</div> <div><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</div> <div><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</div> <div><input type="checkbox"/> The referenced sections are not readily determinate.</div>   |                   |          |                      |            |                |                                  |                                |            |  |  |                     |                      |   |               |   |



| 2003 IPC – 2003 UPC REFERENCE COMPARISON   |  |   |
|--|--|---|
| IBC Code Section   | IPC Code Sections  | UPC Code Sections   |
| <b>ITEM 57</b><br><b>2902.1.1 Unisex toilet and bath fixtures.</b> Fixtures located within unisex toilet bathing rooms complying with Section 404 of the <i>International Plumbing Code</i> are permitted to be included in determining the minimum required number of fixtures for assembly and mercantile occupancies. | <b>SECTION 404</b><br><b>ACCESSIBLE PLUMBING FACILITIES</b><br><b>404.1 Where required.</b> Accessible plumbing facilities and fixtures shall be provided in accordance with the <i>International Building Code</i> .<br><b>[Note:</b> This section refers to access requirements in the building code.]<br><br><b>[B]403.1.1 Unisex toilet and bath fixtures.</b> Fixtures located within unisex toilet and bathing rooms complying with Section 404 are permitted to be included in determining the minimum required number of fixtures for assembly and mercantile occupancies. | <b>413.3 Separate Facilities.</b><br>Separate toilet facilities shall be provided for each sex.<br><b>Exceptions:</b><br>(1) Residential installations.<br>(2) In occupancies serving ten (10) or fewer people, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall be permitted for use by both sexes.<br>(3) In business and mercantile occupancies with a total floor area of fifteen hundred (1500) square feet (139.5 m2) or less, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall satisfy the requirements for serving customers and employees of both sexes. |
| <b>ITEM 57</b><br><b>Committee Comments</b><br>(Use additional pages as needed)  | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div>  |   |

| 2003 IPC – 2003 UPC REFERENCE COMPARISON  |   |  |
|---|---|--|
| IBC Code Section  | IPC Code Sections   | UPC Code Sections  |
| <b>ITEM 58</b><br><b>3305.1 Facilities required.</b> Sanitary facilities shall be provided during construction, remodeling or demolition activities in accordance with the <i>International Plumbing Code</i> . | <b>SECTION 311</b><br><b>TOILET FACILITIES FOR WORKERS</b><br><b>311.1 General.</b> Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to ANSI Z4.3.  | <b>413.7 Toilet Facilities for Workers.</b><br>Suitable toilet facilities shall be provided and maintained in a sanitary condition for the use of workers during construction. |
| <b>ITEM 58</b><br><b>Committee Comments</b><br>(Use additional pages as needed)   | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div> |  |

| 2003 IPC – 2003 UPC REFERENCE COMPARISON  |  |   |
|---|--|---|
| IBC Code Section  | IPC Code Sections  | UPC Code Sections   |
| <p><b>ITEM 59</b><br/> <b>3401.3 Compliance with other codes.</b> Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in the <i>International Fire Code</i>, <i>International Fuel Gas Code</i>, <i>International Plumbing Code</i>, <i>International Property Maintenance Code</i>, <i>International Private Sewage Disposal Code</i>, <i>International Mechanical Code</i>, <i>International Residential Code</i> and <i>ICC Electrical Code</i>.</p> | <p><b>[EB] 102.4 Additions, alterations or repairs.</b> Additions, alterations, renovations or repairs to any plumbing system shall conform to that required for a new plumbing system without requiring the existing plumbing system to comply with all the requirements of this code. Additions, alterations or repairs shall not cause an existing system to become unsafe, insanitary or overloaded.<br/> Minor additions, alterations, renovations and repairs to existing plumbing systems shall be permitted in the same manner and arrangement as in the existing system, provided that such repairs or replacement are not hazardous and are approved.</p> <p><b>[EB] 102.5 Change in occupancy.</b> It shall be unlawful to make any change in the occupancy of any structure that will subject the structure to any special provision of this code without approval of the code official. The code official shall certify that such structure meets the intent of the provisions of law governing building construction for the proposed new occupancy and that such change of occupancy does not result in any hazard to the public health, safety or welfare.</p> | <p><b>101.5.1 Additions, Alterations, or Repairs.</b><br/> Additions, alterations, or repairs may be made to any plumbing system without requiring the existing plumbing system to comply with all the requirements of this code, provided the addition, alteration, or repair conforms to that required for a new plumbing system. Additions, alterations, or repairs shall not cause an existing system to become unsafe, insanitary, or overloaded.</p> <p><b>101.5.2 Health and Safety.</b> Whenever compliance with all the provisions of this code fails to eliminate or alleviate a nuisance, or any other dangerous or insanitary condition which may involve health or safety hazards, the owner or the owner's agent shall install such additional plumbing and drainage facilities or shall make such repairs or alterations as may be ordered by the Authority Having Jurisdiction.</p> <p><b>101.4.1.1.1</b> In existing buildings or premises in which plumbing installations are to be altered, repaired, or renovated, deviations from the provisions of this code are permitted, provided such deviations are found to be necessary and are first approved by the Authority Having Jurisdiction.</p> <p><b>101.5.4 Changes in Building Occupancy.</b><br/> Plumbing systems which are a part of any building or structure undergoing a change in use or occupancy, as defined in the Building code, shall comply to all requirements of this code which may be applicable to the new use or occupancy.</p> |

| 2003 IPC – 2003 UPC REFERENCE COMPARISON  |                          |  |
|---|--------------------------|--|
| IBC Code Section  | IPC Code Sections        | UPC Code Sections  |
| <b>ITEM 59</b><br><b>Committee Comments</b><br>(Use additional pages as needed) | <input type="checkbox"/> | The requirements are equivalent  |
|   | <input type="checkbox"/> | The uniform code is different from the international code. What is missing from the uniform code:                |
|   | <input type="checkbox"/> | The uniform code does not address requirements in the international code. What is missing from the uniform code: |
|   | <input type="checkbox"/> | The referenced sections are not readily determinate.   |



**2003 IFGC – 2003 UPC & UMC REFERENCE COMPARISON**

| IBC Code Section   | IFGC Code Sections  | UPC/UMC Code Sections  |
|--|---|--|
| <p><b>ITEM 60</b><br/> <b>415.7.3 Liquefied petroleum gas-distribution facilities.</b> The design and construction of propane, butane, propylene, butylene and other liquefied petroleum gas-distribution facilities shall conform to the applicable provisions of Sections 415.7.3.1 through 415.7.3.5.2. The storage and handling of liquefied petroleum gas systems shall conform to the <i>International Fire Code</i>. The design and installation of piping, equipment and systems that utilize liquefied petroleum gas shall be in accordance with the <i>International Fuel Gas Code</i>. Liquefied petroleum gas-distribution facilities shall be ventilated in accordance with the <i>International Mechanical Code</i> and Section 415.7.3.1.</p> | <p>General reference to the entire IFGC, whose length precludes its reproduction in this chart. Based on NFPA 54.</p>   | <p>UPC Chapter 12 (UMC Chapter 13) addresses fuel piping installations. Chapter 8 of the UMC addresses ventilation of gas appliances. Chapter 9 of the UMC addresses specific mechanical appliances. All of these chapters are based on, and reprint portions of, NFPA 54.</p> |
| <p><b>ITEM 60</b><br/> <b>Committee Comments</b><br/>         (Use additional pages as needed)</p>   | <div> <input type="checkbox"/> The requirements are equivalent         </div> <div> <input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:         </div> <div> <input type="checkbox"/> The referenced sections are not readily determinate.         </div> |  |

| 2003 IFGC – 2003 UPC & UMC REFERENCE COMPARISON  |   |  |
|--|---|--|
| IBC Code Section   | IFGC Code Sections  | UPC/UMC Code Sections  |
| <b>ITEM 61</b><br><b>2113.11.1.2 Gas appliances.</b> Flue lining systems for gas appliances shall be in accordance with the <i>International Fuel Gas Code</i> . | <p><b>501.12 Residential and low-heat appliances flue lining systems.</b> Flue lining systems for use with residential-type and low-heat appliances shall be limited to the following:</p> <ol style="list-style-type: none"> <li>1. Clay flue lining complying with the requirements of ASTM C 315 or equivalent. Clay flue lining shall be installed in accordance with the <i>International Building Code</i>.</li> <li>2. Listed chimney lining systems complying with UL 1777.</li> <li>3. Other approved materials that will resist, without cracking, softening or corrosion, flue gases and condensate at temperatures up to 1,800°F (982°C).</li> </ol> <p><b>501.13 Category I appliance flue lining systems.</b> Flue lining systems for use with Category I appliances shall be limited to the following:</p> <ol style="list-style-type: none"> <li>1. Flue lining systems complying with Section 501.12.</li> <li>2. Chimney lining systems listed and labeled for use with gas appliances with draft hoods and other Category I gas appliances listed and labeled for use with Type B vents.</li> </ol> <p><b>503.5.3 Masonry chimneys.</b> Masonry chimneys shall be built and installed in accordance with NFPA 211 and shall be lined with approved clay flue lining, a listed chimney lining system, or other approved material that will resist corrosion, erosion, softening, or cracking from vent gases at temperatures up to 1800°F (982°C).<br/> <b>Exception:</b> Masonry chimney flues serving listed gas appliances with draft hoods, Category I appliances, and other gas appliances listed for use with Type B vent shall be permitted to be lined with a chimney lining system specifically listed for use only with such appliances. The liner shall be installed in accordance with the liner manufacturer's instructions and the terms of the listing. A permanent identifying label shall be attached at the point where the connection is to be made to the liner. The label shall read: "This chimney liner is for appliances that burn gas only. Do not connect to solid or liquid fuel-burning appliances or incinerators."</p> <p><b>503.5.6.1 Chimney lining.</b> Chimneys shall be lined in accordance with NFPA 211.<br/> <b>Exception:</b> Existing chimneys shall be permitted to have their use continued when an appliance is replaced by an appliance of similar type, input rating, and efficiency.</p> <p><b>503.10.2.5 Medium-heat appliances.</b> Vent connectors for medium-heat equipment and commercial and industrial incinerators shall be constructed of factory-built medium-heat chimney sections or steel of a thickness not less than that specified in Table 503.10.2.5 and shall comply with the following:</p> <ol style="list-style-type: none"> <li>1. A steel vent connector for equipment with a vent gas</li> </ol> | <p><b>802.5.1.3</b> Masonry chimneys shall be built and installed in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel-Burning Appliances, and lined with approved clay flue lining, a listed chimney lining system, or other approved material that will resist corrosion, erosion, softening, or cracking from vent gases at temperatures up to 1800°F (982°C).<br/> <i>Exception: Masonry chimney flues lined with a chimney lining system specifically listed for use with listed gas appliances with draft hoods, Category I appliances, and other gas appliances listed for use with Type B vents shall be permitted. The liner shall be installed in accordance with the liner manufacturer's instructions and the terms of the listing. A permanent identifying label shall be attached at the point where the connection is to be made to the liner. The label shall read: "This chimney liner is for appliances that burn gas only. Do not connect to solid or liquid-fuel-burning appliances or incinerators."</i></p> <p><b>802.5.4 Inspection of Chimneys</b><br/> <b>(B)</b> Chimneys shall be lined in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents and Solid-Fuel-Burning Appliances.<br/>     ...<br/> <b>(D)</b> When inspection reveals that an existing chimney is not safe for the intended application, it shall be repaired, rebuilt, lined, relined, or replaced with a vent or chimney to conform to NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel-Burning Appliances, and shall be suitable for the equipment to be attached.</p> <p><b>802.10.2.6</b> Vent connectors for medium-heat equipment and commercial and industrial incinerators shall be constructed of factory-built, medium-heat chimney sections or steel of a thickness not less than that specified in Table 8-4, and shall comply with the following:</p> <ol style="list-style-type: none"> <li>(1) A steel vent connector for equipment with a vent gas</li> </ol> |

**2003 IFGC – 2003 UPC & UMC REFERENCE COMPARISON**

| IBC Code Section   | IFGC Code Sections  | UPC/UMC Code Sections  |
|--|---|--|
|  | <p>temperature in excess of 1000°F (538°C), measured at the entrance to the connector shall be lined with medium-duty fire brick (ASTM C 64, Type F), or the equivalent.</p> <p>2. The lining shall be at least 2 1/2 inches (64 mm) thick for a vent connector having a diameter or greatest cross-sectional dimension of 18 inches (457 mm) or less.</p> <p>3. The lining shall be at least 4 1/2 inches (114 mm) thick laid on the 4 1/2-inch (114 mm) bed for a vent connector having a diameter or greatest cross-sectional dimension greater than 18 inches (457 mm).</p> <p>4. Factory-built chimney sections, if employed, shall be joined together in accordance with the chimney manufacturers' instructions.</p> <p><b>504.2.7 Liner system sizing.</b> Listed corrugated metallic chimney liner systems in masonry chimneys shall be sized by using Table 504.2(1) or 504.2(2) for Type B vents with the maximum capacity reduced by 20 percent (0.80 x maximum capacity) and the minimum capacity as shown in Table 504.2(1) or 504.2(2). Corrugated metallic liner systems installed with bends or offsets shall have their maximum capacity further reduced in accordance with Section 504.2.3. The 20-percent reduction for corrugated metallic chimney liner systems includes an allowance for one long-radius 90-degree (157 rad) turn at the bottom of the liner. (<b>§504.3.19</b> for multiple appliances similar)</p> | <p>temperature in excess of 1000°F (538°C) measured at the entrance to the connector shall be lined with medium-duty fire brick (ASTM C 64, Specification for Refractories for Incinerators and Boilers, Type F) or the equivalent.</p> <p>(2) The lining shall be at least 2-1/2 in. (64 mm) thick for a vent connector having a diameter or greatest cross-sectional dimension of 18 in. (460 mm) or less.</p> <p>(3) The lining shall be at least 4-1/2 in. (110 mm) thick laid on the 4-1/2 in. (110 mm) bed for a vent connector having a diameter or greatest cross-sectional dimension greater than 18 in. (460 mm).</p> <p>(4) Factory-built chimney sections, if employed, shall be joined together in accordance with the chimney manufacturer's instructions.</p> <p><b>803.1.7</b> Listed corrugated metallic chimney liner systems in masonry chimneys shall be sized by using Tables 8-5 or 8-6 for Type B vents with the maximum capacity reduced by 20% (0.80 maximum capacity) and the minimum capacity as shown in Table 8-5 or 8-6. Corrugated metallic liner systems installed with bends or offsets shall have their maximum capacity further reduced in accordance with 803.1.3. The 20% reduction for corrugated metallic chimney liner systems includes an allowance for one long radius 90 degree turn at the bottom of the liner. (<b>§803.2.18</b> for multiple appliances similar)</p> |
| <p><b>ITEM 61</b><br/><b>Committee Comments</b><br/>(Use additional pages as needed)</p> | <p><input type="checkbox"/> The requirements are equivalent</p> <p><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The referenced sections are not readily determinate.</p>   |  |

**2003 IFGC – 2003 UPC & UMC REFERENCE COMPARISON**

| IBC Code Section  | IFGC Code Sections   | UPC/UMC Code Sections  |
|---|--|--|
| <p><b>ITEM 62</b><br/> <b>2113.15 Flue area (appliance).</b><br/> Chimney flues shall not be smaller in area than the area of the connector from the appliance. Chimney flues connected to more than one appliance shall not be less than the area of the largest connector plus 50 percent of the areas of additional chimney connectors.<br/> <b>Exceptions:</b><br/> 1. Chimney flues serving oil-fired appliances sized in accordance with NFPA 31.<br/> 2. Chimney flues serving gas-fired appliances sized in accordance with the <i>International Fuel Gas Code</i>.</p> | <p><b>501.4 Minimum size of chimney or vent.</b> Chimneys and vents shall be sized in accordance with Section 504.<br/> <b>501.15.1 Size.</b> The [existing] chimney or vent shall be resized as necessary to control flue gas condensation in the interior of the chimney or vent and to provide the appliance or appliances served with the required draft. For Category I appliances, the resizing shall be in accordance with Section 502.<br/> <b>503.5.5 Size of chimneys.</b> The effective area of a chimney venting system serving listed appliances with draft hoods, Category I appliances, and other appliances listed for use with Type B vents shall be determined in accordance with one of the following methods:<br/> 1. The provisions of Section 504. [§504 and Tables: “Sizing of Category I Appliance Venting Systems.”]<br/> 2. For sizing an individual chimney venting system for a single appliance with a draft hood, the effective areas of the vent connector and chimney flue shall be not less than the area of the appliance flue collar or draft hood outlet, nor greater than seven times the draft hood outlet area.<br/> 3. For sizing a chimney venting system connected to two appliances with draft hoods, the effective area of the chimney flue shall be not less than the area of the larger draft hood outlet plus 50 percent of the area of the smaller draft hood outlet, nor greater than seven times the smallest draft hood outlet area.<br/> 4. Chimney venting systems using mechanical draft shall be sized in accordance with approved engineering methods.<br/> 5. Other approved engineering methods.</p> | <p><b>802.5.3 Size of Chimneys.</b> The effective area of a chimney venting system serving listed gas appliances with draft hoods, Category I appliances, and other appliances listed for use with Type B vents shall be in accordance with one of the following methods:<br/> (1) Section 803.0. [§803 and Tables: “Sizing of Category I Venting Systems”]<br/> (2) For sizing an individual chimney venting system for a single appliance with a draft hood, the effective areas of the vent connector and chimney flue shall be not less than the area of the appliance flue collar or draft hood outlet or greater than seven times the draft hood outlet area.<br/> (3) For sizing a chimney venting system connected to two appliances with draft hoods, the effective area of the chimney flue shall be not less than the area of the larger draft hood outlet plus 50 percent of the area of the smaller draft hood outlet, or greater than seven times the smallest draft hood outlet area.<br/> (4) Other approved engineering methods.<br/> (5) Chimney venting systems using mechanical draft shall be sized in accordance with approved engineering methods. Where an incinerator is vented by a chimney serving other gas utilization equipment, the gas input to the incinerator shall not be included in calculating chimney size, provided the chimney flue diameter is not less than 1 in. (25 mm) larger in equivalent diameter than the diameter of the incinerator flue outlet.</p> |
| <p><b>ITEM 62</b><br/> <b>Committee Comments</b><br/> (Use additional pages as needed)</p>  | <p><input type="checkbox"/> The requirements are equivalent</p> <p><input type="checkbox"/> The uniform code is different from the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The uniform code does not address requirements in the international code. What is missing from the uniform code:</p> <p><input type="checkbox"/> The referenced sections are not readily determinate.</p>  |  |